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Address

SOME NEGLECTED FACTS IN THE BIOLOGY OF THE TETANUS BACILLUS.

THEIR BEARING ON THE SAFETY OF THE SO-CALLED BIOLOGIC PRODUCTS.*

THEOBALD SMITH, M.D.

George Fabyan Professor of Comparative Pathology in the Harvard University Medical School; Director of the Antitoxin and Vaccine Laboratory of the Massachusetts State Board of Health.

BOSTON.

Medical science, like any other applied science, deals not so much with abstract biologic principles, as with the facts of every day life, illumined and made orderly by these principles. Through a knowledge of such principles the facts of our concrete existence may often be controlled and rearranged for our good. Like other applied sciences, medical science often uses incomplete truths, data with gaps in them, methods inadequately tested or not sufficiently developed. Hence the accidents of our daily life. Measures designed to do good may have concealed within them incidental dangers due to faulty processes. It is one of these to which I wish to call your attention this evening. It involves the principle of *non nocere,* one which we must ever keep before us in the prevention and treatment of disease.

About nine years ago, in a very brief article,[1] I called attention to the inefficiency of discontinuous boiling or steaming when large quantities of bouillon are to be sterilized in relatively shallow layers. In the routine preparation of diphtheria toxin it was found that the spores of anaërobic bacteria frequently survived the repeated steamings. After the diphtheria bacilli had established anaërobic conditions by forming a surface pellicle or membrane, these spores began to germinate, and more or less multiplication took place. It was a routine practice of the laboratory to submit all such cultures to microscopic examination and titration. One or both methods would reveal any accidental contamination.

The anaërobes encountered in these contaminated flasks were reserved for future study by removing the diphtheria bacilli by boiling from a small portion of the culture fluid, and a considerable number of cultures were collected, only a few of which have survived the accidents of time. One of these cultures was pathogenic, for guinea-pigs died over night after a subcutaneous injection of one cubic centimeter of a bouillon culture. There were no lesions, local or general, beyond an occasional trace of edema at the point of inoculation, and marked congestion of the lungs.

Nothing more was done until the past summer, when I began a more serious study of the anaërobes in my collection. The nature of this culture was not recognized until minute doses were employed. The disease then showed a longer period of incubation, and, to my surprise, the animals (rabbit, pigeon, guinea-pig, white rat) became affected with tetanus. A more thorough microscopic study of the culture, from day to day, revealed the presence of an anaërobe, beginning spore formation within 24 hours, and masking the presence of a second anaërobe which produced spores after the second or third day, and which had all the morphologic characteristics of the tetanus bacillus. That the spores of the tetanus bacillus should survive three steamings, of 20 minutes each, was new to me, and I at once began to test the resistance of the spores and to examine the literature on this point.

Kitasato,[2] well known as the first who isolated the tetanus bacillus in pure culture and studied its biologic characters, stated that the spores resist moist heat at 80 C. for one hour, but that they are killed in streaming steam in 5 minutes. Vaillard and Vincent,[3] closely following Kitasato, stated that the spores, heated in the presence of moisture in a closed vessel, would resist destruction at 80 C. for 6 hours; at 90 C. for 2 hours; at 100 C., 3 to 4 minutes; that they were not always destroyed in 5 minutes, but never resisted more than 8 minutes at 100 C. These statements by Kitasato and by Vaillard and Vincent found their way into textbooks, some authors quoting the former, others the latter. In the volume of Kolle and Wassermann's large hand-book containing Lingelsheim's article on tetanus and bearing the date of 1903, Kitasato's original statement is quoted without comment or dissent.

The extended use of gelatin as a hemostatic in dangerous and otherwise uncontrollable hemorrhages, which led to a series of fatal cases of tetanus in the years 1901 to 1903, called attention to the resistance of tetanus spores to the temperature of boiling water. Levy and Bruns,[4] taking these unfortunate accidents as a text, determined anew the resistance of tetanus spores. According to them, destruction begins at 8½ minutes at 100 C.; after 15 minutes very few survive; after 30 minutes none.

In a short bulletin, Anderson[5] calls attention to the presence of tetanus spores in commercial gelatin, as determined by Levy and Bruns. A tetanus bacillus isolated by him from one of seven samples of gelatin was killed between 20 and 30 seconds at 100 C.

Tuck[6] next takes up the same subject in view of the dangers of the subcutaneous injection of gelatin. Tetanus cultures, pure or mixed with *B. subtilis,* were always

* Read, Dec. 18, 1907, at a joint meeting of the Chicago Pathological Society and the Chicago Medical Society.

1. Jour. Exper. Med., 1898, iii, p. 647.
2. Zeitschr. f. Hyg., vii, p. 225.
3. Annal. de l'Institut Pasteur, 1891, v, p. 1.
4. Grenzgeb. d. Med. u. Chir., 1902, x, p. 235.
5. U. S. P. H. and M.-H. Service, Hygienic Laboratory, Bull No. 9, September, 1902.
6. Jour. Pathol. and Bact., 1903-4, ix, p. 38.

killed after 10 minutes' boiling. Some samples of gelatin, accidentally containing tetanus spores, were not sterilized after three boilings, of 30 minutes each, on consecutive days. Tuck does not state, however, that the spore-bearing anaërobes other than tetanus were responsible for this resistance. His concluding statement would lead us to think that they were, for, to allay unnecessary alarm concerning the use of gelatin, he says: "... I am fully convinced that no spores of tetanus can resist boiling for over 20 minutes."

Falcioni[7] is the last observer dealing with the same theme. He impregnated gelatin with spores of tetanus bacilli grown in agar or broth for 10 to 12 days, and used Koch's steam sterilizer. The gelatin was exposed in 2, 5 and 10 per cent. solutions. He found the spores to resist destruction for 2½, but not for 3 hours, in streaming steam.

The foregoing results are sufficiently varied and conflicting to suggest to us, on first thought, that races of tetanus bacilli exist, the spores of which vary widely in their resistance to moist heat at 100 C. Before resting, however, on this inference, it would be necessary to know the tendency to spore formation in different media and at different temperatures; the age of the culture at which spores are ripe, and, therefore, most resistant; the reaction of the medium in which the spores are boiled or steamed, because all of these variable factors have probably entered into the experiments quoted.[8]

Before I had informed myself of the work done thus far I had made some experiments to determine the resistance to boiling of two cultures in my hands—one obtained from presumably sterilized bouillon (Culture 4);[9] the other brought by me, in 1896, from a large German institute (Culture 3).

The method employed to produce a rich crop of spores is one which I have used for many years and to which attention has been called in several short papers.[10] To ordinary bouillon, in suitably constructed fermentation tubes, is added a bit of kidney, or spleen or liver from a rabbit or guinea-pig, just killed with chloroform. The piece of tissue is torn or pinched away from the organ with fine sterile forceps and varies from ½ to ¾ cm. in bulk. This is pushed well into the connecting tube, where it remains. The tubes need not be freshly prepared. They respond by growth even after standing for weeks in the laboratory. Sugar should not be added.

Animals which are to yield the tissues should be perfectly well. There should be no ulcers or other sores on them. They should not have been inoculated with bacteria of any kind for at least a month previous. They should be handled with great gentleness and not chloroformed in such a way as to cause them to struggle. The reason for these precautions is that any lesion or previous inoculation of bacteria may lead to the distribution and prolonged latency of such bacteria in the body and these are brought to light by the large pieces of tissue used in the culture medium which is very sensitive to both aërobic and anaërobic bacteria. The struggling of the animal and rough handling may lead to slight injuries through which bacteria may enter the circulation. In spite of all these precautions fermentation tubes prepared in this way occasionally become clouded. Hence, they should only be used after an incubation of three or four days. Usually a slight clouding of the fluid in the open branch of the tube in which a bit of liver has been placed is due to a fine granular precipitate. Such clouded fluid should, however, be examined carefully microscopically.[11]

When tubes prepared in this way are inoculated with material containing spores or bacilli a rapid and abundant multiplication takes place. The spore production is especially rich in and about the piece of tissue. Fluid from such cultures was used to determine the resistance of the spores at the temperature of boiling water or streaming steam.

Tetanus 3.

Experiment 1.—Culture in a fermentation tube, as above described, nine days old. Five c.c. of turbid fluid placed in thick-walled test tubes and the latter tightly stoppered with rubber stoppers, each perforated with a glass tube drawn out into a capillary, free extremity. Tubes were completely immersed in boiling water, except the capillary vent through which the air and steam could freely enter and escape. After the exposure for given periods of time, about 1 c.c. of the boiled fluid was added to fermentation tubes to determine the presence or absence of living spores. The culture fluid exposed to boiling water for 10, 20 and 40 minutes contained living spores, as proved by the successful subcultures. Fluid boiled 60 and 80 minutes failed to produce growth in subcultures.

Experiment 2.—Culture nine days old. Tubes about 6 mm. in diameter, drawn out and sealed at both ends in the flame, and containing about 1 c.c. culture fluid and an equal volume of air, were exposed to streaming steam in the Arnold sterilizer for 20, 40, 50, 60 and 70 minutes. The tubes were then opened and the entire contents of each allowed to flow into a fermentation tube. All cultures, except the one receiving the contents of the 60-minute tube, developed and contained only tetanus bacilli.

Experiment 3.—Culture in fermentation tube containing fermented bouillon, plus tissue from a guinea-pig. In incubator sixteen days. Total age, eighteen days. Spore-bearing bacilli very abundant, as usual. Only a few free spores seen. The arrangement for exposure of the culture fluid was the same as in Experiment 1, save that a large boiler, with a tight-fitting cover was used. The test tubes were completely immersed in the boiling water. Tubes were exposed 60, 90 and 120 minutes. To the last-named enough gelatin was added to make a 5 per cent. solution. This was done to determine if gelatin increased the resistance of spores, as suggested by Falcioni's[7] results. All the subcultures, to each of which from 2 to 3 c.c. of the exposed culture had been added, remained sterile.

Tetanus 4.

Experiment 4.—Culture six days old. Portions exposed in test tubes to boiling water, as described under Experiment 1, for 10, 20 and 40 minutes. All subcultures positive.

Experiment 5.—Culture eight days old. Tubes exposed as in preceding experiment, at 60, 80 and 100 minutes. Subcultures of fluids heated 80 and 100 minutes remained clear.

7. Annali d'igiene sperimentale, 1904, N. S., xiv, p. 319.

8. In the case of nutrient gelatin, which has been a favorite medium, I find sporulation very feeble and involution forms common. It is quite probable that such cultures would resist boiling but feebly. The use of dextrose in fairly large amounts, such as 1 or 2 per cent., has been frequent among bacteriologists, although this amount is inimical to rapid spore formation.

9. A pure culture was obtained from the mixed culture on blood-agar in desiccating jars, according to Bordet. Quite unexpectedly, pure cultures were also obtained with bits of liver from a white rat inoculated subcutaneously in the thigh with the impure culture. As a rule, and in harmony with the results of earlier observers, tubes inoculated with large bits of organs, and with ¼-½ c.c. of heart's blood of rabbits and guinea-pigs inoculated with tetanus bacilli remained sterile. The colonies of tetanus bacilli spread very rapidly on blood-agar plates and the hemolytic area produced by a single colony may reach one centimeter in diameter. This tendency to spread made it difficult to obtain pure cultures from the colonies of the contaminating anaërobe whose colonies were very compact, for the tetanus colonies invaded them, though this invasion was not recognizable under low powers. I succeeded more quickly in obtaining pure cultures of this latter organism by boiling the mixed culture for 85 minutes. This destroyed the tetanus spores, but not those of the associated species.

10. Jour. Boston Soc. Med. Sc., 1899, p. 340; Jour. Med. Res., 1905, xiv, p. 193.

11. This method of using tissues to stimulate the growth of anaërobes has recently been rediscovered by Tarozzi (Centrbl. f. Bakt., Orig., 1905, xxxiv, p. 619.

That the spores surviving prolonged boiling belonged to the true tetanus bacillus was demonstrated by testing the subculture of the 60-minute tube of this experiment on two guinea-pigs. Both guinea-pigs acquired tetanus after the subcutaneous injection of .00075 c.c. and 00005 c.c., respectively.

EXPERIMENT 6.—Made at the same time and in the same manner as Experiment 2. Culture nine days old. Contained also an oval-spored anaërobic bacillus. Placed in sealed pipettes, and exposed to streaming steam for 20, 40, 50, 60 and 70 minutes. Subcultures from all, excepting the 70-minute tube, contained tetanus bacilli. The subculture of the 70-minute tube contained only the oval-spored bacillus.

EXPERIMENT 7.—Performed at the same time and in the same way as Experiment 3. Culture fifteen days in thermostat. Total age seventeen days. Spore-bearing bacteria very abundant. Tubes exposed in boiling water with those of Experiment 3 for 60, 90 and 120 minutes. A tube containing culture fluid plus 5 per cent. gelatin was exposed 120 minutes with the rest. The subcultures of these four tubes remained sterile.

EXPERIMENT 8.—This experiment was to determine whether any spores would survive steaming for 20 minutes on three consecutive days. To imitate the usual laboratory environment as closely as possible, the following tubes were prepared with tetanus cultures, nine days in the thermostat, and containing spore-bearing bacilli:

BACILLUS 4.

A: Ordinary test tube, 1 inch in diameter, plugged with cotton wool, into which about 8 c.c. culture fluid was put with pipette.

B: The same kind of tube, into which 5 c.c. culture fluid, plus 7 c.c. freshly boiled bouillon was put.

C: Ordinary ⅝ inch test tube, plugged with cotton wool, containing 2 c.c. culture fluid, plus 10 c.c. fresh bouillon, making a column 9 cm. high.

BACILLUS 3.

D: Ordinary test tube, 1 inch in diameter, containing about 6 c.c. culture fluid, and 6 c.c. freshly boiled bouillon.

This arrangement was designed to favor germination of the spores between the steamings in B, C and D. In A, the absence of freshly boiled bouillon would tend to leave the spores unchanged. There is, of course, nothing to show that tetanus spores were actually stimulated to germinate under the given conditions. An Arnold sterilizer was used and the tubes kept at 70 F. in the intervals. The following table gives the amount of fluid added to fresh fermentation tubes after each steaming, and the result indicated with the sign +, when multiplication took place.

Designation of culture.	Amount transferred to fresh fermentation tubes after: 1st steaming.	2d steaming.	3d steaming.
4. A.	1 c.c. +	1 c.c. —	6 c.c. —
B.	1 c.c. +	2 c.c. —	9 c.c. —
C.	2 c.c. —	3 c.c. —	7 c.c. —
3. D.	1 c.c. +	2 c.c. +	9 c.c. +

In this test the spores of Bacillus 3 were distinctly more resistant than those of 4. Spores in all but the dilution C survived the first steaming. None but Culture 3 survived the second and third. It should be noted here that the tubes were actually exposed 20 minutes each time. The reckoning began only after the thermometer of the steam chamber had registered a constant temperature.[12]

The foregoing experiments, though merely tentative and suggestive of more detailed and thorough investigation of the tetanus spore, are sufficient to prove that under the conditions of cultivation, as described above, some spores survive a single boiling or steaming for 20 minutes regularly, usually for 40 minutes, and occasionally for 60 minutes. In one case 70 minutes' exposure did not destroy all spores. They are sufficient to prove the possibility of tetanus spores appearing in culture fluids sterilized by discontinuous boiling or steaming in routine laboratory work, even when a relatively small amount of fluid is exposed to streaming steam for fully 20 minutes on three successive days.

There is also evidence to show that after 40 minutes' exposure a large portion of spores are killed, for the tubes of bouillon inoculated with them usually become clouded after 36 hours. Cultures of spores exposed 20 minutes became clouded within 24 hours. That there are spores which resist steaming for 2½ hours, as claimed by Falcioni,[7] needs further confirmation in view of the facts given above.

There is to-day a widespread tendency to accept and apply the principles of immunity or specific resistance toward parasitic invaders in the routine treatment of certain infectious diseases, and in the prevention of such diseases as well. To what extent the application of methods of immunization may grow will depend, to a great degree, on the special education of the masses in the true nature of disease, and their willingness to undergo treatment as a preventive measure. Moving parallel with this application of the principles of immunity and depending on it is the growth in the use of so-called biologic products in the prevention and treatment of disease.

These may roughly be defined as obtained directly or indirectly from the animal body. Leaving aside those products which are derived from the animal body by chemical processes and designed for administration by the mouth, I wish to confine my remarks to those with which the body is inoculated, or which are injected into it. Twenty years ago animal vaccine was the chief, if not the sole product, used in this way. Then came the antitoxic and bactericidal sera, chiefly derived from the horse. To-day we have various bacterial products grown chiefly in bouillon or in media made with it as the chief basis. The subcutaneous application of gelatin as a hemostatic has already been mentioned.

Groups of cases of tetanus have been associated at some time in the recent past with vaccine, antitoxic sera, gelatin and bacterial vaccines. The occurrence of occasional stray spores in vaccine was demonstrated by Carini.[13] Such vaccine, however, had proved entirely harmless in thousands of cases. It is more than probable that the actual danger would begin if such occasional stray spores were allowed to germinate in the vaccine pulp through some serious fault in manipulation. It is conceivable that the vaccine pulp after removal from the calf or heifer, if not at once chilled and placed in a low temperature, or mixed with glycerin or other antiseptic, such as carbolic acid or chloroform, may form a very rich medium for anaërobic bacteria. Some carelessness or neglect just at this stage might prove disastrous if tetanus spores accidentally present should multiply. The epidemic in this country in 1902, reported by Willson[14] and McFarland,[15] may have been the result of some such occurrence. On the other hand, neglected vaccination wounds, or those in which improper bandages or shields favor anaërobiosis, may stim-

12. In the routine work of the laboratory the actual time required for large volumes of fluid to reach the boiling point may remain undetermined. Hence the length of exposure to a given temperature may be uncertain and probably shorter than the estimated period. In the above experiments, the time was counted after the mercurial column of the thermometer in the steam chamber of the Arnold sterilizer had come to rest. Even with a large flame this requires 10 minutes at least. How much longer a large quantity of bouillon would require could be determined only by actual measurement.

13. Centralbl. f. Pakt. Orig., 1904, xxxvii, p. 48.
14. THE JOURNAL A. M. A., 1902, xxxviii, p. 1147.
15. Jour. Med. Research, 1902, n. s. ii, p. 474.

ulate the germination of spores coming from without and lead to the occasionally reported sporadic cases following vaccination.

In the preparation of antitoxic and bactericidal sera, there are so many safeguards thrown around them, from beginning to end, that here also only gross negligence or some hitherto unforeseen occurrence could lead to the production of tetanus. Yet several outbreaks of tetanus occurred some years ago—one in this country and one in Europe—as a result of the use of antitoxin.[16]

The occurrence of tetanus after the subcutaneous injection of gelatin in uncontrollable hemorrhage caused consternation in medical and surgical circles some years ago. The cases were reported in 1902 and 1903. I find no reports later than the latter year. In 1903 Chauffard[17] was able to report to the French Academy of Medicine as many as 18 cases collected from medical literature. Dieulafoy[18] adds five cases to this list. I have made no attempt to bring together all the cases. The 23 above referred to are already too many, and show how the widely diffused use of a new remedy may lead to many nearly simultaneous fatal accidents. The explanation was very simple. Commercial gelatin, on examination, was found to contain tetanus spores. Thus Levy and Bruns[4] found eight out of thirteen samples of gelatin infected with them. Krause[19] failed to find his samples infected. Anderson[5] reports one out of seven infected. Tuck[6] found one out of six samples of French gelatin, one out of four samples of German gelatin and four out of five samples of English gelatin contaminated with tetanus. The gelatin was usually sterilized at the apothecary's and the process was insufficient to destroy the spores. In view of the fact that some of the spores in my cultures resisted boiling 40 to 70 minutes, the recommendations of the various writers who investigated the bacterial flora of commercial gelatin, or else had used gelatin in their practice are interesting.

Margoniner and Hirsch[20] expose the gelatin in 2 per cent. solutions to streaming steam for one hour. Krause[19] recommends streaming steam for 30 minutes on five consecutive days. Holtschmidt[21] boils the 2 per cent. solution in a water bath for five or six hours. Anderson[5] recommends boiling for at least 10 minutes, or else fractional sterilization on three successive days. The temperature at which this is to take place is not given. Falcioni[7] calls attention to the uncertainties of discontinuous steaming, because in his experiments the spores failed to germinate in 2, 5 and 10 per cent. gelatin. He recommends 30 minutes, at 130 C., in the autoclave. Levy and Bruns[4] recommend streaming steam for 40 minutes. They call attention to the dangers of using large flasks in place of test tubes, for the former become heated rather slowly. Finally, the commission[22] appointed by the French Academy of Medicine recommend that the gelatin dissolved in 0.7 per cent. sodium chlorid solution be exposed, in bulk not exceeding 150 c.c., in an autoclave at 115 C. for 30 minutes.

There is sufficient variety in these recommendations to justify a more thorough investigation, even if the injection of gelatin in surgery should not prove to do all that has been ascribed to it.

The possible association of tetanus with bacterial vaccines was demonstrated in the unfortunate outbreak at Mulkowal, India, in 1902. Only last year full abstracts of the reports of the investigating committees were published in English medical journals.[23] These inform us that at the place mentioned 107 persons were inoculated with Haffkine's plague prophylactic. Of these 19 were affected with symptoms of tetanus and died. The prophylactic consisted of a suspension of plague bacilli from agar cultures in salt solution and sterilized by heat. The 19 unfortunates were all inoculated with fluid from the same bottle. They were the first to undergo the treatment. The syringe was cleansed superficially after this bottle had been emptied and the rest were injected with the same syringe from other bottles of the same lot, but none contracted the disease. A dramatic incident occurred when the prominent persons of the locality at first hesitated to undergo the simple operation. Dr. Elliott, the physician in charge, bared his arm and was prepared to inoculate himself first. At this the people gave way and submitted to the injection. Dr. Elliott would have been among the victims.

Exhaustive investigations were made by an Indian Commission and by the Lister Institute in London. The records show certain irregularities which occurred during the administration of the vaccine, such as the dropping of forceps used to remove the cork upon the ground, etc. Both commissions, however, are inclined to refer the accidents to the contents of the bottle rather than to extraneous infection during the operation. It also seems to me that the evidence points in this direction. I have been unable to read the full report and learn of any investigations as to the mode of sterilizing the culture fluid in the laboratory at Bombay, where the plague vaccine was prepared.

My own experience, related above, opens up the possibility for the survival of tetanus spores in bouillon or agar, unless temperatures above 100 C. are used. It should also be borne in mind that tetanus spores are widely disseminated in India. Goodrich[24] states that in Bombay alone there were 1,955 cases of tetanus in five years. These do not include puerperal cases.

Before leaving this phase of the subject there should be mentioned, for the sake of completeness, the epidemics of tetanus in our large cities, following wounds from blank cartridges on Independence Day. The only experimental study of this subject which I have been able to find is by H. G. Wells.[25] Dr. Wells made an exhaustive bacteriologic study of 200 cartridges from five firms. Though several other anaërobes were encountered in cultures from them the tetanus bacillus was not detected.

The great resistance of tetanus spores concerns both the practicing physician and surgeon and the laboratory worker who is engaged in the preparation of biologic products for subcutaneous administration. As regards the surgeon, I do not believe that the usual disinfection by boiling or steaming at 100 C., such as may be resorted to away from hospitals need be placed under suspicion or discarded, but whatever has come in contact with fecal matter or with material undergoing putrefaction should be autoclaved at 110 C. to 115 C., unless the disinfecting action of the boiling water in which objects are immersed is increased by alkalis and other substances.

16. The outbreak ascribed to this country occurred in St. Louis in 1902, and was due to the presence of tetanus toxin in the diphtheria antitoxin. It was proved by a commission that the horse yielding the serum was in the incubation stage of tetanus. (Bolton and Fisch, Trans. Amer. Physicians, 1902, p. 463.)
17. Bull. Acad. Med., Paris, 1903, xlix, p. 549.
18. Bull. Acad. Med., Paris, 1903, xlix, p. 630.
19. Berl. klin. Wochschr., 1902, xxxix, p. 673.
20. Therapeut. Monatshefte, 1902, p. 334.
21. Münch. med. Wochschr., 1902, xlix, p. 12.
22. Bull. Acad. Med., 1903, l, p. 805.
23. Jour. Trop. Med. and Hyg., 1907, x, p. 33.
24. Annals of Surgery, 1897, xxvi, p. 710.
25. Phila. Med. Jour., 1900, v, p. 1377.

It is the producer of biologic products who is most concerned in the occurrence of resistant tetanus spores. For if they may resist boiling for an hour, it is obvious that the autoclave is the only safeguard. Wherever tetanus antitoxin is being prepared, the necessary preparation of tetanus toxin to immunize horses makes great caution necessary. Whatever comes in contact with such toxin must be autoclaved, and the communication between the rooms where tetanus toxin is being prepared and those devoted to antitoxins should only be through the autoclave, so far as all apparatus is concerned. The occasional occurrence of tetanus among the horses of antitoxin plants may, in part, be due to the accidental escape of tetanus spores from the laboratory. Spore-containing toxins should not be injected and even filtered toxins should be treated with suspicion, as filters may become leaky at any time.

In the preparation of bacterial vaccines the danger is not altogether chimerical. My own experience with the tetanus spore, which successfully ran the gauntlet of the ordinary sterilization, and reappeared in the fully developed diphtheria culture in a Fernbach flask, is a good illustration. At that time autoclaves were not so generally used as they are now and it was my belief that the higher temperatures rendered the bouillon less satisfactory for toxin-production. So far as I know this belief has not been disproved, but the autoclave came, nevertheless, as a necessity, and it has come to stay. The occurrence emphasizes the importance of routine microscopic examination af all such material, testing it on small, susceptible animals and making subcultures wherever the product is to be used on the human subject.

It must be emphasized, however, that in spite of the wide distribution of tetanus spores over the world, and the gigantic amounts of biologic products in the form of sera and vaccines consumed annually the number of accidents which have occurred is excessively small and no one is likely ever to recur from the same causes. If accidents should occur they will be due to the erroneous impression still generally prevalent concerning the heat resistance of tetanus spores. The chief object of my communication is to aid in dispelling this error.

The prevention of tetanus should not rest with the attempts to destroy the spores, but go farther and determine, if possible, what the real habitat and the bacterial and other associations of this formidable species are. We have two ways of approaching this problem. One is to localize the bacillus by actual isolation, i. e., by finding it by means of bacteriologic procedures. The other is more indirect and consists in a detailed study of its biologic characteristics and those of closely related species, from which its affinities might be inferred.

As regards its occurrence, it is now well known that well-manured garden soil has yielded tetanus bacilli in the hands of various observers. The old theory derived from the French, which claims that the tetanus bacillus is a regular inhabitant of the intestines of the horse, and newer observations which extend this habitat to other species of domestic animals as well, seems to have found more or less acceptance. Thus, Sanchez Toledo and Veillon[26] found tetanus in the feces of four out of six horses and in the feces of one of two cows. Hoffmann[27] examined feces of rabbits, guinea-pigs, horses, cattle and sheep. Only one examination of 22 proved positive. This was in the feces of a horse. Pizzini[28] found tetanus bacilli in the feces of peasants having much to do with horses.

The large cecum and double colon peculiar to the genus including the horse, in which the food after passing the small intestines is stored temporarily to permit absorption, serves well the purposes of anaërobes. This large reservoir may dilate rapidly during digestive disturbances, when fermentation is not kept under control and may require tapping to relieve the great distension. It would be a rather curious paradox if the animal, the most susceptible of all to tetanus toxin, should prove to be the primary host of the tetanus bacillus. We should expect the exact reverse and look for a relatively high immunity of the carrier.

Closely associated with this problem of breeding places of the tetanus bacillus is its dissemination over the globe and the presence of its spores in so many places outside the intestines of animals. The great resistance of the spores to the normal destructive influences of nature in part explains this dissemination. Climate enters as a factor, for tetanus is stated to be far more prevalent in warm climates. Yet Iceland at one time suffered severely from tetanus neonatorum.

The biologic characteristics of this organism are in some respects noteworthy. On account of the disagreeable odors which emanate from its cultures it may be classed among the putrefactive anaërobes, yet it has very feeble, if any, powers of liquefying coagulated blood serum and egg albumin, and it liquefies gelatine very slowly. The ordinary non-pathogenic putrefactive anaërobes possess these powers to a high degree. Indol may easily be demonstrated in its cultures, but not in those of the actively putrefactive types. These characters place it between the genuinely pathogenic and the putrefactive anaërobes. Some years ago I formulated the doctrine that among a given group of closely related bacteria those which became parasitic and pathogenic lost some or all of the fermentative and putrefactive functions belonging to more independent types. Judged from this standpoint, the tetanus bacillus has lost some and retained other characteristics of the putrefactive types and this would point to the digestive tract as a possible breeding ground. On the other hand, the presence of the tetanus bacillus in garden soil and in gelatin suggests much more extensive breeding places than the intestine, and it may be that it is capable of multiplying in symbiotic relation with other anaërobes wherever proteid material undergoes putrefaction. In fact, it is conceivable that it simply passes through the intestines in spore form without multiplying at all.

Another aspect of the subject well worth considering is the continued dissemination of this organism and the permanent infestation of regions originally free from it, through commercial and industrial agencies, just as certain territories in our country have become permanently infected with anthrax spores, thanks to the offal and residues washed down into streams from tanneries and hair factories. The wide distribution and consumption of gelatin infected with tetanus spores must certainly assist, quite effectively, in their dissemination wherever human ordure is used as a fertilizer, for the usual culinary treatment of gelatin can hardly be expected to kill tetanus spores. The same may be true of the wide dissemination of tetanus spores on vegetables, tubers, and fruits[29] transported by train loads from

26. La Semaine Med., 1890, x, p. 45.
27. Hyg. Rundschau, 1905, xv, 1233.
28. Riv. d'Igiene e. san. pubbl., 1898, x, p. 170.

29. Only recently Rabinowitsch found the water in which strawberries sold in Berlin had been washed quite regularly infected with tetanus spores. Arch f. Hygiene, 1907, lxi, p. 103.

south to north, from west to east, and as a general rule from the territories where tetanus may be considered most prevalent to those in which it is less prevalent.

Another agency in the distribution of tetanus spores over limited areas is the common housefly. Anyone who has occupied himself with the study of tetanus and other putrefactive bacteria, knows how a solitary housefly in a large room is quickly attracted by the offensive odors, and how persistent in its attempts to reach the culture fluid this insect is. Films spread on cover-glasses are quickly eaten by this pest, and in view of experiments made by Lord and others with tubercle bacilli I do not hesitate to assume that tetanus spores are not injured in their passage through the digestive tract of flies, and that the latter may carry this infection from house to house. There can be no doubt that with the mosquito and the rat, the housefly has much to answer for in civilized communities.

The theme on which I have discoursed at some length may seem to many a commonplace one and hardly worthy of notice. To one who has had the responsibility of the preparation of diphtheria antitoxin during the past 12 years, the subject appears of great importance, for the preparation of such therapeutic agents requires all the circumspection, care and knowlege which can possibly be bestowed on it. It is far easier to arouse the nervousness of the public than to allay it, and though the accidents that have followed directly or indirectly the use of biologic products are infinitesimal as compared with those of our railroads, yet the public is accustomed to the one and more or less indifferent to it, and very much disturbed by the other. The cause of rational, progressive medicine is distincly retarded by accidents which would hardly cause a ripple if they occurred in industrial life.

My theme finally illustrates an occasionally observed fact in medicine. Whenever practice outruns the laboratory, and, more or less impatient, applies the latter's results to the prevention and cure of disease, it frequently deals with half truths whose application may be harmful. It is this sense of being surrounded by half truths which should stimulate us all not to rest content with them, but to use our efforts unremittingly until they have been made whole.

Original Articles

THE HOME TREATMENT OF PULMONARY TUBERCULOSIS.

ORVILLE HARRY BROWN, M.D.
Physician in Chief of the Missouri State Sanatorium.
MOUNT VERNON, MO.

INTRODUCTION.

In acute diseases, reactions to treatment (hygienic, medicinal and other) are often more or less prompt and decisive. In chronic diseases the reactions to treatment are, for the most part, slow and so indefinite as to cause a shadow of doubt as to the responsibility of the treatment, for either the good or bad termination. In acute diseases physicians generally recognize that the chances for recovery are greatly enhanced by perfect quiet. So firmly do they believe this that every movement possible is saved the patient. A nurse assists in the feeding, she bathes the patient in such a way as to worry him the least; everyone is excluded from the sick room, with the exception of the nurse and one or two of the most intimate members of the family, and, in fact, everything is done to ensure quiet for the patient.

The prolonged course of chronic diseases, the hopelessness of the conditions, the resulting severe mental disturbances, the dread of the inevitable period of considerable duration when the victims are forced to take to their beds, have all been factors in causing physicians to recommend as active a life as could be tolerated without too much inconvenience. Thus it has been with tuberculosis. Most of the physicians, as well as the laity, up till recently, have considered tuberculosis as an incurable disease, and have only attempted to make the progress of the disease as slow, and the remaining days as livable, as possible. The treatment of tuberculosis in recent years has yielded such gratifying results that we can now say that, beyond question, tuberculosis is curable. This idea has not yet become generally disseminated. But we must change our opinions regarding the curability and the treatment of tuberculosis, and the sooner we do this the more lives we will save. Someone has pertinently said that "We must care for the consumptive in the right place, in the right way, and at the right time, until he is cured, instead of, as now, in the wrong place, at the wrong time, until he is dead."

The question of what to say when asked for advice by a consumptive is ever a puzzling one to most physicians. Just what advice is given very often, is too well known to make it of any force if repeated here. The writer sees so many patients who are doing the wrong thing, often on the advice of physicians, that he is prompted to write on the above topic.

PHYSIOLOGY OF TUBERCULOSIS.

The anatomy of the pathologic lesion of the disease is well known to all, but not so the physiology—and the physiology is of the extremest importance. Tubercle bacilli produce poison. When this goes into the system, by absorption from a lesion in the body or from a hypodermic injection, a definite physiologic reaction is induced. This reaction is responsible for the symptoms of tuberculosis. Wright, of London, and his assistants have found that exercise and massage of an infected area produce as definite changes in the blood as come from injections of tubercle poison, whereas this will not occur if the infected part is kept quiet. For this reason an organ the seat of an infection should be placed at rest.

In the light of Wright's discoveries the rest should be intercepted by sufficient work to cause an inoculation into the blood of a small amount of poison at not too frequent intervals. The rationale of this will be seen in a later paragraph. The corpuscles of the blood have the faculty of ingesting bacteria. The serum of the blood often has the property of agglutinating bacteria and of precipitating the toxin of the bacteria. These are some of the protective elements or immunity factors of the blood. There are others of which we know, and there are doubtless still others of which we do not know. It has been shown that these protective elements are profoundly influenced by bacterial toxins.

When the toxin first goes into the blood there is a decrease in at least some of the protective elements. The extent and duration of the decrease is slight or great, depending on the amount of toxin introduced and the ability of the blood to counteract it. This period of decrease, called by Wright "the negative phase," endures usually from a few hours to a few days. If during this

period more toxin is introduced into the blood a further decrease in the protective elements results. This may occur so frequently as to keep the immunity factors constantly at a low ebb.

If, however, only one inoculation of toxin occurs, the negative phase will have run its course in a few days or less time and be superseded by a secondary reaction—an increase in the protective elements of the blood, termed "the positive phase" by Wright and his coworkers. The height and the duration of this phase depends also on the amount of toxin inoculated and on the ability of the blood to counteract it. During this phase the protective elements of the blood are unusually active in fighting the invading bacteria and their toxin. If the protective forces can be kept indefinitely at a high ebb the chances for recovery are much greater than if they are even occasionally at a low ebb.

According to the modern conception of therapeusis, we must attempt to increase the immunity factors of the blood in order to eradicate the disease from the body. On this course of reasoning it is plainly seen that the bacterial poison should be kept from entering the blood at too frequent intervals, and should be caused to enter the blood at the proper times.

It is impossible to put the lungs at rest, but it is possible to reduce the depth and frequency of the respiratory movements to a minimum. From a given focus of infection, and during a definite time, more toxin will be absorbed while the breathing is deep and rapid than if the breathing is slow and shallow. Every movement of the body occurs at the expense of the oxidative processes. Increased oxidation causes an accumulation in the blood of carbon dioxid. An excess of carbon dioxid, together with an impoverishment of the oxygen of the blood, causes the respiration to become deeper and more frequent. This, as was said, causes some toxin to go into the blood. The poison, on entering the blood, as was said, brings about a fall in the protective elements of the blood. If the poison is frequently introduced and in too great doses, the protective factors may become so reduced that the bacteria may gain new footholds and institute other foci from which toxin may be absorbed.

INFLUENCE OF WORK ON THE SYMPTOMS.

The symptoms of tuberculosis—the cough, the fever, the chills, the weakness, the loss of appetite, the loss of weight, the flushed cheeks, the moist axillæ, the night sweats, etc.—are largely the results of the presence of the poison in the blood. As shown above, the poison in the blood may be increased greatly by anything that makes one breathe faster or deeper. It is the usual thing for tuberculous patients to report that they feel better after a rest of a few days, and that the day following an unusually hard day's work they feel worse, and that their symptoms are aggravated. In spite of all this, however, many of us still tell them to exercise in the open air—we tell them to walk, to ride horseback, to camp or to make an overland trip, or to do anything just so they are out of doors. The author has repeatedly seen cases which have gone along for a considerable period without making progress, and when prevailed to take the rest cure, begin immediately, or within a few weeks, to show distinct improvement. In fact, this is the rule.

One patient who had been taking an overland trip, on the advice of her physician, presented herself to the writer for examination. The important findings were that she had been possibly holding her own for the four or five months past. She had considerable throat irritation, was expectorating some and her temperature registered 102 or over. Her appetite was poor. There was considerable involvement of each lung. She had been attempting to walk a half mile each day, and also to assist her mother in the cooking and with the other duties connected with the camp. These she had been recommended to do by her physician. She was advised by the writer to discontinue all work and exercise. At the end of a week she presented herself for a second examination. Her fever was gone, her throat irritation was much reduced, her appetite was better, and she had increased 3 pounds in weight. In the next four weeks she continued to improve—gaining 8, 3, 5 and 3 pounds, respectively, each successive week. Her total gain in eight weeks amounted to 34 pounds. She is now allowed to do a little work. A tub bath will not now cause her to have a fever as it did only a short while back. A short walk of twenty or twenty-five yards at first caused her to feel fatigued. Now at the end of eight weeks she is allowed to walk a half mile or even more, and no untoward results are observed therefrom. The histories of a number of other cases which illustrate the importance of rest for tuberculous patients could be cited, but the one mentioned shows the influence of rest to a very pronounced degree; the most of the cases respond in about the same way, though sometimes not quite so rapidly.

THE DIFFICULTY OF KEEPING PATIENTS QUIET.

Persons suffering from tuberculosis, in any but the last stages of the disease, ordinarily feel fairly well—at least they do not feel like staying in bed continuously for several weeks. As a rule, these patients avoid the bed as long as possible, because they have a superstitious belief that when they once go to bed they are apt to not get up again. This belief must be dispelled, and the rationale of the rest treatment must be explained. The writer has found the following course of reasoning to be both comprehensible and convincing to the patient.

The lungs are the breathing organs of the entire body and are filled with air spaces. On this account they may be compared with a sponge. If a sponge, saturated with water, is gently squeezed, a little water will be squeezed out. If the gentle squeezing is repeated, the amount of water to leave the sponge will gradually decrease until none leaves. But if the sponge is somewhat more than gently squeezed, water will again be caused to exude. In fact, water can be forced out of the sponge at almost any time that sufficient pressure is applied to it. When the lungs are the seat of a tuberculosis infection, the condition existing there, in regard to the tuberculosis poison, is much the same as the water in the sponge. For this reason every respiratory movement has a tendency to cause some tuberculosis poison to leave the foci of infection. Since the lungs are richly supplied with blood vessels, some of the toxin eliminated from the tubercles will be taken up by the blood. During the existence of the symptoms of the disease, or as long as the patient is subject to them, the respiration should be as slow and as shallow as it is possible to have it. All exercise, all unnecessary body movements—bathing, laughing, crying, talking and even sitting up—should be strictly prohibited. In other words, the patient is treated in just as careful a manner as if he was prostrate with pneumonia or typhoid fever.

To get a patient to follow directions carefully is not easy. In fact, it is very difficult, and sometimes impos-

sible. Sometimes, the writer, when explaining the conditions to a particularly intelligent patient, goes so far as to explain the influence of the toxin on the blood—detailing the influence of both the negative and the positive phases. It seems advisable to do this.

MENTAL ATTITUDE OF THE PATIENT.

The mental attitude of the patient is of the greatest importance. If the patient is contrary, and unwilling to believe in the seriousness of his condition, or in the good to be acquired by the rest cure, if he conjures a spirit of antagonism and of unresignedness, or if he is of a nervous, fidgety, absent-minded disposition, it will be difficult, or perhaps impossible, for him to make much progress. The writer has repeatedly noticed that those patients who comprehend the advice given them, and who have dispositions that will allow them to do what they have been told to do, are the surest to make the most rapid recovery. Most tuberculous patients have a high or low grade of neurasthenia, and the resulting symptoms are constantly in need of treatment.

THE NURSE.

A careful, conscientious, intelligent nurse is an absolute necessity. The nurse must, at all times, have complete charge of the patient. She must see that the directions of the physician are carried out. It makes little difference how often some patients are told not to do a certain thing, nor how important they are told it is, they are liable to disobey as soon as the adviser is out of sight. The nurse must have intimate control of the patient, or he will take a bath, or have too animated a conversation, or engage in a general laughing bout with others, or he will do something he should not do, unless the restraining influences of some one is felt.

To cite a little incident that occurred in the sanatorium. One evening, while the nurse was preparing the between-meal lunch, four of the lady patients, whose temperatures had been normal for a while, got into the room of one of the patients, and put on their coats, hats and veils as if they were going out. They surprised the nurse, as they had planned. The result provoked a great deal of laughter. The next day two or three of them had fever. Had it not been for the nurse's short absence this would not have happened. In another instance, a patient's fever jumped from 100 to 103 degrees. She had unadvisedly been given a bath the day before. A week or two later her temperature remained at normal for a couple of days. She wished her room fumigated and she walked to another room. The next day her fever jumped to 100. The writer could cite a large number of incidents which prove conclusively to him that the fever, cough and other signs of toxemia may result indirectly from undue exertion. The nurse is the disciplinarian and must control the patients even unto their slightest exertion. The nurse must keep careful records of the temperatures, of the appetite, of any medicine administered, of the amount of the cough, and of the conditions in general. All of these will be improved, as a rule, by the proper régime, and it is very gratifying and encouraging to the patient to see evidence that he is improving.

ANALYSIS OF THE PHYSIOLOGIC INFLUENCE OF CLIMATE.

There are differences in climates. There may be: atmospheric impurities; a small or large amount of humidity; winds; too little or too much of sunshine; a rarefied and condensed condition of the atmosphere; high or low temperatures; changeable or equable temperatures. An analysis of the physiologic influence of the above factors shows some interesting points. Impurities, such as often exist in the atmosphere of certain parts of large cities—coal-smoke, dust of various kinds, obnoxious gases, etc.—are irritating to the respiratory tract; and a consumptive should not live where he is subjected to them. The humidity is of less importance. In a climate where the humidity is relatively high, evaporation of the perspiration of the body takes place very slowly, and the clothes become moist. Moist clothes are much better conductors of heat and cold than dry clothes; hence, in the summer, the heat is more oppressive, and in the winter the cold is more severe, in a climate where the humidity is high—the temperature being the same—as in another climate where the humidity is low. But clothing and artificial devices can compensate to a greater or less degree for the influences of humidity.

The worst days for consumptives are the hot, humid, oppressive days of summer. These cause deep, rapid, labored respiration. This may bring about, indeed, is likely to bring about, an exaggeration of the symptoms. Winds aid in a change of the atmosphere, and hence may disperse impurities and facilitate evaporation. This is advantageous. Heavy winds are disagreeable, but can easily be avoided.

A sunshiny day is much more cheering and less dismal than a cloudy one, and hence it is more conducive toward one's being out of doors; but the sunshine also makes the day warmer. The cheering days are much to be desired, but excessively warm days are detrimental as the heat causes more rapid respiration. The higher the altitude the rarer the atmosphere; the rarer the atmosphere the more rapid and the deeper must one breathe in order to get the required amount of oxygen. Rapid and deep breathing, as before stated, are distinctly contraindicated in any case of pulmonary tuberculosis, where there is any tendency toward the development of toxemia. The sea level, or a few hundred feet above it, is preferable to a higher altitude.

Temperature is an important factor in the handling of tuberculous patients. Where it is too warm, the breathing will be too deep and rapid, and where it is too cold, discomfort results. The latter, however, is much less dangerous than the former. Sudden changes of temperature are liable to be more or less harmful, unless great care is exercised to prevent sudden cooling of the body.

As no climate is likely to possess all of the desirable features and none of the harmful ones, and since, as a rule, the climate of any place within a thousand feet of the sea level possesses both good and bad elements, and since any of the untoward factors of climate, except excessive temperatures and rarefied atmosphere can readily be compensated for, there is usually, not a great deal to be said for or against any certain climate in regard to its peculiar fitness for the cure of tuberculosis.

It seems best to repeat that hot climates and high altitudes should be avoided by most consumptives. Sometimes, sending a man to another climate will get him away from his business and force him to rest. It is the rest and not the climate that does the good. The indiscriminate changing from one climate to another is absolutely wrong. To deprive a sick man of his home and loving friends, without giving him anything to take their places, is wrong. Placing a patient in a sanatorium robs him of his family and home, but these are compensated for by the care he receives.

SANATORIUM TREATMENT.

This is superior to home treatment because of the more perfect control that it is possible to have of the patient. The strictly enforced rest is what yields the results, and it is not enough to recommend rest to a patient; he must have some one in control of him who will make him rest. And this some one should be a person who is specially trained, and who will rigidly enforce the orders of the physician.

In a sanatorium the feeding is also done in a manner that is unusual in the home; and many petty annoyances do not have to be contended with in sanatoria. Sometimes, homesickness is an important factor. It may be so bad as to materially retard the progress of the patient.

DIET.

There is little that needs to be said concerning any special diet for the tuberculous convalescent. The victuals should be prepared in an appetizing manner and they must be served in an enticing style. This is a point of the supremest significance. Things which disagree with a patient must, of course, be avoided. Disturbances of digestion must be treated symptomatically as they arise.

As a rule, the appetite is very much improved by a few weeks' rest. It is the writer's custom to have his patients take, in addition to their regular three meals per day, three or four lunches. A lunch consists of eggs and milk or milk and cheese sandwiches, or milk and a dish of beans or ice cream or custard, or something else which is particularly nutritious. The milk may be served hot, alone or as cocoa. Not a few patients claim that they can not eat eggs and milk; but perseverance and tempting the appetite by the various ways of serving will invariably succeed in developing a tolerance if not an appetite for both eggs and milk. Milk should be taken very slowly. In order to get some patients to observe this, they must have something to eat with the milk. The writer has devised an omelet wafer, composed of egg and just enough flour to thicken so that it will bake well. It can be seasoned to suit the taste. This is a very good way of serving eggs.

THE PHYSICIAN'S VISIT.

Unless the patient is so far convalescent that he has no signs of toxemia, even after taking the exercise necessary to go to and from the physician's office, the doctor should visit him at his home. The frequency of these visits must depend largely on the mental attitude of the patient. If he is confident of receiving benefit, and is trying hard to follow orders, and is not restless or nervous in any way, the physician does not need to call very often—once every week or two will suffice. But if the patient is despondent, doubtful of results, ready to give up, needful of encouragement, the physician should carry cheer and encouragement to him frequently.

The physician must incessantly be repeating the fact that every little bit of exercise may be harmful; he will have to coax and plead with the patient to remain quiet. He must himself be a firm believer in the good to be accomplished by enforced rest, fresh air and good food, and he must never give up. A thorough understanding of the condition should make him a firm believer. It may take weeks or even months before noticeable improvement can be detailed.

The patient will often be doing things unknown to the doctor, and in the belief that they are absolutely harmless. The author had one patient who, unknown to him, and after it was thought that she thoroughly understood what was desired of her, was practicing deep breathing, for a few minutes, each day. She discontinued this, and her improvement has been much more marked since than it was before.

DRUGS.

So far as we know, there are no drugs which will do sufficient consistent good in tuberculosis to compensate for the harm they may do. Tuberculin may be used to advantage in certain instances, provided it is used with extreme care. It should be held in mind that the administration of tuberculin is doing nothing more than putting into the patient's body some of the toxin, of which he has already had too much. By a proper regulation of the exercise, an inoculation of the patient with his own toxin can be effected. If there is anything in the specificity of the immunity elements, the latter is the rational procedure. The only disadvantage is in the regulation of the dosage, but the same trouble arises in the hypodermic administration of tuberculin, as there is ever danger of giving it with a concomitant absorption of tuberculin from the focus of infection in the lungs.

The use of drugs in tuberculosis for the purpose of making the patient think that the doctor is doing something or to keep the patient coming to the doctor's office is, in most instances, pernicious. Sometimes, when reasoning has been found useless, it may become necessary to deceive a patient in order to keep control of him long enough to do him good. Such an instance is pardonable.

Complications, however, frequently call for drugs. There are no special contraindications to calomel or cascara for constipation, or for sodium bicarbonate in hyperacidity, or for bismuth and salol in dysenteric conditions, or for nitroglycerin or calcium lactate in hemorrhages, or for aspirin in headaches, or for many other drugs in certain other conditions.

Because of the heavy demands necessarily made on it, the digestive tract should be saved all undue irritating influences of drugs. The writer is opposed, however, on other grounds, to the use of drugs, unless there are specific indications for them; many persons have an extreme confidence in the ability of drugs to cure, and when drugs are given them they naturally, having great faith in drugs, relegate all other orders to a position of far inferior value, and they thereby do themselves more or less harm.

TREATMENT OF THE TUBERCULOUS CONVALESCENT.

After a patient has experienced a relief from his symptoms for a few weeks, he may begin to sit up to eat and to read. He may be allowed a little later to take short walks. The increase in his exertions should be made not every day, nor oftener than every five to ten days. An explanation of this course of reasoning lies in the duration of the negative phase following an inoculation of toxin. And there is apt to be an inoculation of toxin after a period of even mild exercise. The effect of one day's work may not be noticeably bad, but an accumulation of the bad effects of several days' work may be detectable.

The writer aims to have every one of his patients begin exercise so gradually and cautiously that no bad effects will result from it. This is not always possible, and the second best thing to do is to have the exercise begin so slowly that but little harm can result, and this

should be repaired as quickly as possible. A return to rest is indicated whenever there are signs of a backset. The first few weeks after the fever is gone are the most trying to the patient, because he invariably feels fine and scarcely can refrain from doing something. Those who can not control themselves are usually the ones who get the backsets and have a hard time to make a recovery.

Later in the period of convalescing outdoor exercise can be given a patient. This should be in measured doses. Walking a certain distance, in a given time, is, perhaps, one of the most satisfactory exercises. This can be increased or decreased as judged best by the physician in charge of the patient. The decision as to the amount of exercise to be allowed a patient should be left to the physician, as it is too important a question to leave to the patient or even to the nurse. By gradually increasing the work, the patient will eventually do a day's work, one day after another, without harm. Careful living should be practiced, however, after this.

SUMMARY.

In conclusion, it should be said, that in the treatment of tuberculosis a proper regulation of rest and exercise is the most important point. Absolute rest must be enforced during and for some time after the existence of toxemia. The exercise must begin after nearly normal weight is gained, and very gradually, so as not to produce toxemia. It is best that the exercise be begun so that there is an interval of a week or more between two exercise periods.

The second important factor is good air. Fresh country air, or a climate which is not too warm, and at an altitude of not more than 1,000 to 1,500 feet is desirable. Air should be circulating through the patient's room all the time. It is of some benefit, perhaps, in some instances, for the patient to live out of doors. This is of little importance, however, when compared with the significance of the rest and exercise.

The third important factor is good food. The patient should have three good meals a day, and between each two meals a lunch of eggs and milk. Forced feeding is not necessary, but good feeding is essential.

It should also be repeated that consumptives are curable, and that it is being demonstrated every day. (The tuberculous patient must, however, be treated as though he were really sick—just as sick as if he had some acute disease, as scarlet fever, typhoid or pneumonia.)

In tuberculosis, where there are signs of progress of the disease, it is of far more importance to keep the patient quiet than to force him to eat unusually large quantities of food, or keep him out of doors all the time, or give him large quantities of cod-liver oil, creosote or other drugs.

THE MANAGEMENT OF THE SEXUAL FACTOR IN TUBERCULOSIS,

AND ITS RELATION TO THE HOME TREATMENT.

W. H. PETERS, M.D.

Secretary of the Board of Trustees of the Rhode Island State Sanatorium; Admitting Physician and Director of Pine Ridge Camp for Consumptives.

PROVIDENCE, R. I.

The problem how to regulate sexual intercourse is one of the most difficult in phthisis therapy, and it is correspondingly important. I purpose to consider first the general factors which obtain, then the means by which we may deal with them in sanatoria, and, finally, how we can manage this very delicate matter in the home treatment of the consumptive, which, in my opinion, is a serious drawback to that method.

Some physicians think it is erroneous to hold that consumptives are more prone to sexual excitement than healthy individuals; that we are impressed in rather a disproportionate way because the erethism which some consumptives admit is surprising and grotesque, when this disease is, in itself, so enervating and so exhausting. At the other extreme are those physicians who consider the phenomenon a very prevalent one. The latter view is apt to be held by those of our colleagues who do a great deal of dispensary work among the poor in large cities, and among the victims of alcoholism and prostitution, which factors are so often either predisposing to or co-existing with consumption. Between these two extremes of opinion, however, are ample data to show that the tendency to abnormal sexual excitement is so frequent among consumptives as to require the careful attention of the physician.

What are the reasons for such abnormal erethism in consumptives? There is, first, the lack of occupation, which is either enforced by the physician as one of the fundamental principles of phthisis therapy, or which has naturally come about through the patient's weakness and hesitancy of employers to engage a sick man. Enforced idleness follows, and this oftentimes leads to unwholesome introspection. Then, the temperature in consumption, no doubt, excites erethism. The toxins generated by the tubercle bacillus and in the mixed infections have a similar influence. Then, there is the forced feeding essential to the cure; the eating of raw eggs and rich red meats; also the stimulating life in the open air and sunshine, and the tonics—such as strychnin—which we find adjuvant to the cure. Besides, some consumptives feel that their disease dooms them to an early death and "Drink and be merry, for tomorrow you die," becomes their life philosophy.

This attitude of the consumptives is not to be observed so much nowadays, since we are proving by many thousands of examples that the malady is not necessarily fatal. It is said that this abnormal excitability is greater among women than among men. If such be the case, it must be because the home life and the lack of employment are more accentuated among women. On the other hand, we can easily understand how erethism is more common among male adolescents, for it is at that period that a new, an unaccustomed and a most exhausting appetite manifests itself, with all the force of a great revelation. I believe that the advent of the sexual appetite with adolescence is a large factor in the appalling tuberculosis death rate which begins with adolescence and which has been destroying every third or fourth adult life. The preponderance of tuberculosis in girls, on the other hand, is from the second to the twentieth year (Cornet).

Every physician has been impressed by the almost disgusting and sometimes revolting persistence of the sexual instinct in consumptives, even late in the disease. I have repeatedly, in my sanatorium experience, taken the temperatures when married couples were left to themselves during visits. There has been an invariable increase of from one to three degrees. Especially was such a rise in temperature marked in women who have been running a normal temperature after the husband's visit. One of my patients, a man of 35, with advanced pulmonary tuberculosis, had intercourse on each of five consecutive nights, the last exertion resulting in a hemorrhage from which he died. My colleague, Dr. H. L.

Barnes, superintendent of the Rhode Island State Sanatorium, narrated to me the case of a male patient who died from a hemorrhage coming during the sexual act, which took place while on a visit from the sanatorium to his wife.

The sexual desire may persist, and this is not at all uncommon, to the very day of death. Cornet relates the case of a tuberculous husband who copulated every night.

Copulation under such circumstances must be most offensive to the healthy partner, if for no other reason than that the well-known odor of the consumptive's perspiration is so intensely disagreeable and penetrating.

"My nose," states Babcock, "can usually diagnose a case of consumption for me." Of course, the sexual excitement is increased by irregular habits of life and by the inordinate use of alcohol; moreover, there is grave danger of infection, which occurs with great frequency in marriage, not only by the ordinary and familiar avenues, but also by immediate contact, as when the patient has a tuberculous lesion of the testicle or of the epididymus. Cornet relates how in the most disgusting ways infection may occur in illegitimate intercourse; and it is not only ordinary intercourse which must be considered, but also exhausting onanism and pollutions.

In the sanatorium we may do much that can not be done in the home treatment of consumptives by constant regulation and the proper supervision and observation of the patient's life, both day and night. Still, the greater vigilance is by no means always rewarded. The sanatorium is much the better place for the married consumptive and the careless patient, and, if possible, privacy should not be permitted during visits. All men who work in institutions are acquainted with the many difficulties that are here met; all know how the most beneficent of councils, the most salutary orders are oftentimes disregarded when the most powerful of human temptations appears.

It is often wondered at that sexual intercourse does not result more fatally than seems to be the case. To understand this we must bear in mind the enormous resources in reserve which exist even in a very sick body, the factors of safety which Dr. Meltzer[1] described in such a scientific way.

The home treatment is, after all, the only one that can be followed in many cases of consumption, since we have not sanatoria enough to take even a small percentage of these patients. And here the physician can only advise and give the most explicit and earnest counsel, explaining the dangers that lie in excessive intercourse. He must detail those I have already set forth, and he must, in addition, require the consumptive to sleep in a room by himself, or, at least, in a bed by himself. It must be explained that even in healthy individuals, the exhaustion from the sexual act and the shock on the nervous system are very great and not always recovered from; how much greater then, is this so in the sufferer from so chronic, so exhausting, so enervating a disease as consumption. I have come on the statement that coitus hurts the consumptive more than a five-mile walk. Of course it is difficult to consider this estimate scientifically, because there is no means of gauging it. But I do not believe that there is any underestimation in this statement; indeed, the sexual act in an advanced consumptive would probably be a greater strain on the organism than a walk of a number of miles, hurtful though the latter exercise certainly would be.

We must represent to the patient that the treatment which we emphasize, rest, nourishing food, outdoor life, and the use of tonics and stimulants is essential, in order that the exhausted organism may fight and destroy the forces of disease which so grievously beset it; and that if the body becomes enervated by excesses and acts tending to deplete the strength, recovery can not be hoped for.

We must appeal to the fair mindedness of the consumptive, stating to him that the spermatic fluid contains the fructifying sperm up to the day of death; that children have often been born long after the death of consumptive fathers; that such children, because of the physiologic poverty of their sick progenitors, come into the world with the most unfair and cruel handicap of an abnormal heredity. The well husband of a consumptive wife should have his honor and real affection for her appealed to, not to make her pregnant; since in such cases the saddest of all deaths is deplorably frequent.

Finally, consumptives who consult physicians with regard to their marriage prospects should be most earnestly counseled not to take the step until they are entirely cured. The wise warning of Flick should be given, "many a young man sacrifices his chances of recovery on the altar of Hymen." And also this: When consumption is hanging about a girl, the distance between the marriage-bed and the grave is usually short with her. The husband, if he does not become a widower soon after the birth of the first child, may count on a perpetually ailing wife.

Drs. Knopf, Huber, Osler, Babcock, Cornet and Flick all touch on this important subject in their writings, and I am indebted to them for many excellent points, but I really feel that the subject does not receive the consideration it deserves. I think the absolute abstinence of sexual intercourse is one of the most important points to consider; and one that is especially hard to overcome in the home treatment of the great white plague. And it is my opinion that the home treatment is very unsuitable for the management of the sexual factor.

1. THE JOURNAL A. M. A., Feb. 23, 1907; also the Harvey Society Lectures (Lippincott Co.).

TRAUMATIC PNEUMONIA

WITH REPORT OF A CASE IN A FEMALE AGED SIX YEARS.*

JAMES JOSEPH KING, A.B., M.D.
Resident Physician at the Children's Hospital.
PHILADELPHIA.

It is certain that pneumonia frequently follows bodily injury and traumatic pneumonia may be defined as that form of pneumonia which follows direct or indirect injury to the lungs. The trauma may cause a fracture of a rib, and the rib is sometimes forced into the lung substance, or a foreign body may have been aspirated. The injuries following such accidents are, without doubt, the most frequent causes of this kind of pneumonia. These, however, are not the only causes, for not a few cases have been reported in which the patient received a fall or a simple contusion on the thorax, and one English writer mentions a case following shock from a railroad accident, although no injury was actually received. Pneumonia developed in one week after the accident, and the rail-

* Read before the Philadelphia Pediatric Society, Dec. 10, 1907.

road company was sued for damages, the patient alleging the great nervous shock as the direct cause of the trouble.

Although the older clinicians realized that trauma and pneumonia were frequently associated, they did not understand the exact etiologic factor existing between the two. It is a well known fact that whatever lowers vitality predisposes to pneumonia. It may be alcoholism, which is the most frequent predisposing factor in adults, great fatigue, hardship, previous illness, exposure to cold or to dampness, or trauma. Sturges says: "In some cases the disease is not caused by the injury, but is brought to light by its agency; in others it is the indirect consequence due not to any immediate harm done the lung, but to nervous shock which, whether it arises from injury or any other cause, produces a condition which is favorable to the development of pneumonia." To-day trauma is considered no more than a predisposing cause of pneumonia. The micro-organism is the exciting cause, without which the disease will not develop.

The affection is characterized by the usual signs of pneumonia. When foreign bodies have been aspirated there is generally a definite history of sudden onset, and usually there is an initial attack of coughing when the foreign body enters. Frequently there is hemorrhage or bloody sputum brought forth by the cough, which is more or less constant. There may be localized pain. Prostration is frequently marked in these cases. It has been said that if a bronchus be blocked up completely there is a clear percussion sound over the part of the lung with which it is connected, while the respiratory murmur is abolished. The latter is only weakened if the bronchus be not closed completely. A clear history will aid greatly in the diagnosis.

The prognosis is grave, indeed, when one of the most serious of all diseases is superimposed on a severe traumatism. The mortality of all cases of foreign bodies in the lungs or in the bronchi, when treated by the expectant plan, has been estimated variously at from 56 to 80 per cent. When tracheotomy is performed the death rate is lowered to about 30 per cent., since a much better opportunity is afforded for the spontaneous expulsion of the foreign body. For obvious reasons these figures are not accurate. Some of the fatal cases are not reported, while others, presumably cured, die later of such complications as empyema, atelectasis or lung abscess. Since Kilian reported his method of examination by inserting long tubes in the bronchi and thus locating and removing the foreign body, only an occasional case should be lost.

The treatment of this condition naturally falls into two subdivisions, the treatment of the pneumonia and the treatment of the trauma. It is not necessary here to say anything about the former. If it is suspected that a foreign body has been aspirated, it is wise to locate and remove it, if possible. This may be accomplished by means of the *x*-ray and a surgical operation, or by means of the bronchoscope and the alligator forceps. The latter method is to be preferred if the result can be accomplished by its use. If the expectant plan of treatment is followed the mortality, as above stated, is high, whereas by Kilian's method of locating and removing the foreign body, the death-rate should be very low.

The case which it is my privilege to report by the kindness of Dr. D. J. Milton Miller was admitted to the Children's Hospital, Nov. 15, 1907, with the following history:

Carrie G., aged 6 years, of Austrian parentage, but born in America. Uneventful previous history. Three weeks previously, while holding a carpet tack in her mouth, it suddenly disappeared. She was immediately seized with a violent coughing attack, and she told her mother that she had swallowed the tack. The family physician was called, but gave the child no relief, and attached little significance to the history of the tack. The child passed a restless night, and the coughing paroxysms were frequent. The next morning another physician was called, and he likewise thought little of the tack, but continued to treat the child at her home for three weeks, during which time the coughing and vomiting continued. One week after the accident she first began to complain of pain in her right side. No hemorrhage or bloody sputum had been expectorated.

The examination on admission revealed the following: Temperature, 104.4 F.; respirations, 36; pulse, 140. There was nothing significant about the throat, except enlarged tonsils. The abdomen, spleen, liver and heart were negative. The whole of the lower lobe of the right lung was consolidated. The dulness—almost flatness—was well-marked, and very little air seemed to be entering this portion of the lung. The other portions of the lungs were negative, except for a few rales.

The dulness and almost complete absence of breath sounds made me suspect fluid in the right chest; but on the day after admission the temperature dropped to 96.2 F. The temperature, however, rose again on the following day to 103 F. The respirations were 32, and the pulse 132. The examination of the urine was negative. The blood examination showed, leucocytes, 13,680; hemoglobin, 64 per cent. Nine days later the leucocytes numbered 17,369, and the hemoglobin was 70 per cent. On November 17, the breath sounds with bronchial breathing were again heard at the root of the right lung. Since November 18, three days after admission, the temperature has remained normal, or practically so. On November 20, during a severe coughing paroxysm, she coughed up a large steel carpet tack of the square style, with a large round head; length, 1.5 cm.; circumference of the head, 2 cm. It was brought up into the larynx and she seemed to choke. The nurse, assisting her to get rid of what was supposed to be thick mucus, brought forth the tack with her finger. The lung has completely returned to normal, and on December 2 the blood examination showed the leucocytes to be 9,760, red corpuscles 4,580,000, hemoglobin 78 per cent. She was discharged from the hospital completely recovered. The tack remained in the lung twenty-six days.

In this case the diagnosis seems well established because of the physical signs, the well-marked crisis and the slight leucocytosis.

The following cases selected from the literature on the subject are recited briefly because they illustrate the several varieties of traumatic pneumonia:

CASE 1.—Balser's case is similar to my own. A decorator, who was holding a 14 ounce tack in his mouth, aspirated it, and pneumonia, with crisis in the second week, ensued. Sixty-three days after the accident, he coughed up the tack and complete recovery followed.[1]

CASE 2.—Napier's case is also similar, and it is interesting because the foreign body was not discovered until the autopsy, when the pith of the elder was found in the bronchus communicating with the lower lobes of the right lung. This portion of the lung was entirely consolidated and showed numerous abscesses. Death came nineteeen days after the accident.[2]

CASE 3.—Franczak's case, in a female, aged 8 years, showed the physical signs of pneumonia after aspirating a watermelon seed. This remained in her lung for two months, when she coughed it up in a somewhat decayed condition. She then made a rapid recovery.[3]

CASE 4.—Balser's second case is in a male, aged 69, who aspirated a pea while eating his lunch. On the seventh day after the accident, he coughed up the offending substance, and in a short time was in his usual good health. The evidence of pneumonia appeared two days after the accident.[1]

CASE 5.—Foss's first case was in a laborer, aged 44, who fell thirty feet from a scaffold. One day after the accident pneu-

1. Mediz. Monatschr., N. Y., 1889, vol. 1, p. 36.
2. Glasgow Med. Jour., 1885, vol. xiii, p. 11.
3. Buffalo Med. Jour., 1905-6, vol. lxviii, p. 480.

monia was discovered in the right lung. The autopsy confirmed the diagnosis and showed simple fractures of several ribs.[4]

CASE 6.—Foss's second case is somewhat similar to his first. There is a slight lacerated wound of the scapula without fracture, but which penetrated to the bone. Almost immediately the diagnosis of pneumonia was made and was confirmed by the autopsy four days later.[4]

CASE 7.—Sturges reported a case in a sailor, aged 30, who fell into the mud and sustained a slight injury. Pneumonia developed almost immediately, and death resulted in six days.[5]

CASE 8.—The second case reported by Sturges is a simple contusion pneumonia. A stone mason was struck on the chest by a heavy marble slab and knocked down by the severe blow. No ribs were fractured, but in a few days a typical apex pneumonia developed.[6]

In the last four cases mentioned the question arises whether the pneumonia may not have existed before the trauma occurred. It is well known that sometimes those suffering from febrile affections walk around for several days after the onset of the initial symptoms. This is especially true of typhoid fever patients and particularly so in the case of children. It is rare, however, for those suffering from pneumonia to go about, because usually the prostration is so great as to cause them to remain in bed from the very onset.

INJURIES OF THE SPINAL CORD,

WITH THE STUDY OF NINE CASES WITH NECROPSY.*

ALFRED REGINALD ALLEN, M.D.
Instructor in Neurology and in Neuro-Pathology in the University of Pennsylvania; Assistant Neurologist to the Philadelphia General Hospital.
PHILADELPHIA.

It is my purpose to deal with injuries of the spinal cord secondary to external violence, such as gunshot wounds, fracture-dislocation of the spinal column with involvement of the cord, and involvement of the cord in spinal concussion without spinal lesion. At this time I shall not discuss injuries of the cord from stab wounds.

There are a few points concerning the anatomy of the spinal column to which I wish to call attention before discussing any cases of fracture-dislocation. From our standpoint, the spinal column consists of twenty-four true vertebræ. The sacrum, which is morphologically five vertebræ, we consider in the light of a single bone. Of the coccyx I shall say very little, as it is interesting, chiefly, on account of a possibly faulty ankylosis in cases of fracture or contusion. The ligaments of the spinal column, next to the bony conformation of the vertebræ themselves, play the largest part in the prevention of displacement. The following ligaments are those concerned in the binding together of the integral parts of the spinal column: the intervertebral discs, the anterior common ligament, the posterior common ligament, the interspinous ligaments, the supraspinous ligaments, the intertransverse ligaments, the capsular ligaments and the ligamenti subflavæ. The last named are composed, chiefly, of yellow elastic tissue, and serve, rather, to close in the vertebral canal, than to give protection from injury or prevent overflexion.

The articulation between a superior articular process and its contiguous inferior process is a true diarthrosis of the arthrodial type. On examining a ligamentous preparation of the spinal column, one is struck with the fact that there is very little movement between any two vertebræ, with the single exception of the atlas on the axis. Taken as a whole, however, there is a very great latitude of movement. This is most conspicuous in the cervical region where extension is possible to a surprising extent; likewise flexion, to some extent. In the lumbar region flexion is chiefly predominant. In the thoracic region, on account of the thinness of the intervertebral discs, as also on account of the tile-like arrangement of the laminæ through the middle part of the thoracic spine, there is very little motion. At the two ends of the thoracic spine, however, this tile-like arrangement of the laminæ and the obliquity of the spinous processes are much less, and motion is consequently greater in these regions. Another condition which limits motion in this region is the articulation of the thorax and the very heavy binding which the heads and tubercles of the various ribs possess in their stellate ligaments. According to Wagner and Stolper, the greatest capability of extension and flexion of the spinal column is in the cervical region, from the third to the seventh vertebra, and also from the eleventh thoracic to the second lumbar vertebra.

A vertebral dislocation presupposes, in the first place, a greater or less disturbance of the integrity of the intervertebral discs between bodies of the two vertebræ in question. One finds numerous cases cited in literature where on postmortem examination the intervertebral disc has been pronounced uninjured. I consider this an absolute impossibility. A more careful histologic study would have determined a torn disc.

Fractures and dislocations in the thoracic region, above the tenth thoracic vertebra, are not so frequent as those in the cervical region or as those below the tenth thoracic vertebra. Also, it can be said that fracture and dislocation more frequently involve the lumbar vertebræ than the junction between the twelfth thoracic and the first lumbar. More than half of all the fractures of the spinal column are, according to Pearce Bailey,[1] located below the tenth thoracic vertebra. This statement is hardly borne out by statistics.

Burrell,[2] in a collection of 244 cases of fracture-dislocation, gives 86 in the cervical region, 43 in the upper thoracic, 75 in the lower thoracic, and 40 in the lumbar. When thoracic fracture-dislocation takes place, it is on account of terrific violence, deformity is usually pronounced, and the cord much injured; but, as will be seen further in this discussion, there must be fracture in this region to produce a crushing of the cord, the possibility of a thoracic dislocation without fracture having been denied by Treves.[3]

The articular processes of the cervical vertebræ are set well out from the body, to such an extent, in fact, that any force which would tend to push a vertebra forward, providing it were great enough to overcome the ligamentous protection common to all vertebræ, would not find the bony obstruction which lower down the anterior aspect of the inferior intervertebral notch offers to the posterior aspect of the superior interverte-

4. Brit. Med. Jour., 1884, vol. i, p. 1042.
5. London Lancet, April 24, 1886.
6. Brit. Med. Jour., March 1, 1879.

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, Atlantic City, June, 1907. The article is here abbreviated, but appears in full in the Transactions of the Section and in the author's reprints.

* From the Department of Neurology and the Laboratory of Neuro-Pathology in the University of Pennsylvania.

1. Diseases of the Nervous System Resulting from Accident and Injury, D. Appleton & Co., 1906.
2. A Summary of All the Cases of Fracture of the Spine (244) which were Treated at the Boston City Hospital from 1864 to 1905, Trans. Am. Surg. Assn., vol. xxiii, 1905, p. 56.
3. Surgical Applied Anatomy, 1894, p. 546.

bral notch of the vertebra immediately below it. In fact, the articular surfaces are so far separated in the cervical region that with very little longitudinal separation a complete luxation backward can obtain, the body of the upper vertebra resting on the spinal foramen of the vertebra below. As a matter of fact, however, this luxation is rarely seen, the opposite being usually the case; that is to say, the upper or luxated vertebra passes forward. To my mind, there are several reasons for this. The first is that usually the direction of force which brings about the fracture-dislocation is such that the spine is flexed instead of extended, and in a flexion the line of least resistance is certainly forward, on account of the fact that the anterior superior lip of the vertebral body is rounded off and inclines downward in the cervical region, while in the thoracic region the bodies of the vertebræ are a trifle thicker posteriorly than anteriorly. This inclination forward and downward, invites a slipping forward of the luxated vertebra, which carries with it the intervertebral disc attached to its inferior surface. This intervertebral disc, in the vast majority of cases, succeeds in tearing away the anterior superior lip of the body of the vertebra next below. The obliquity of a fracture of this nature, that is to say, from above posteriorly, in a direction down and anterior, makes a sliding displacement of the upper fragment very easy, and the deformity is often great. It is this deformity which most frequently nips the spinal cord in two, or if it does not actually sever it, so crushes it as to make all function or restoration of function an impossibility. This cutting or crushing of the cord takes place between the posterior upper border of the vertebra, next below the luxated one, and the arch of the dislocated vertebra, as illustrated in Case 7.

Another variety of fracture-dislocation is illustrated in Case 4 (Fig. 1) in which the contiguous surfaces of two vertebral bodies have crumbled under the forced flexion. The greatest pressure being exerted anteriorly, the anterior lips, superior and inferior, of the two vertebræ in question are chiefly concerned in the crumbling. A second result of the disposition of the pressure is the forcing backward of the intervertebral disc. This disc together with the bony detritus presses against the anterior aspect of the cord.

With forced flexion of the cervical spine, the head being pushed forward and down on the chest, the upper or luxated vertebra can slip forward, the posterior lips of the anterior articulating surfaces riding over the anterior lips of the superior articulating surfaces of the vertebra immediately below and becoming locked, as it were, in its superior intervertebral notches. The attenuation of the spinal foramen in this case, though pronounced, is not so complete as in backward luxation, unless the deformity be further accentuated by a crashing of one or both vertebral bodies, as in the case reported by Carson.[4] When we reach the lumbar region, what with the increased thickness of the intervertebral discs and the great mobility of the vertebræ, particularly in flexion, we find that the bony obstacles to dislocation present in the thoracic region do not here obtain, and an anteroposterior displacement is not only possible but is rendered probable, if there be forced flexion of the lumbar spine at the time of, or consequent to the injury. Although, from a mechanical standpoint, it is theoretically possible to have a pure dislocation in the lumbar region uncomplicated by fracture, the lower vertebra slipping forward or backward, yet there are many who think that fracture almost always plays an important part in these injuries.

In the cervical and lower thoracic regions self-reducing dislocation without fracture frequently takes place. We are all familiar with the picture of a case of this kind. A man receives an injury to his spinal column. Careful examination fails to reveal any deformity, crepitus, ecchymosis or other signs of fracture. But there is a partial or complete paralysis present of segmental nature. If this case comes to necropsy, there is found no bony lesion, there may even be a fair amount of firmness in the ligamentous binding, but the spinal cord shows signs of compression opposite an intervertebral disc. At times, this compression is so great that the cord appears as if a string had been tied around it.

There have been many who have advanced the theory that the spinal musculature was a preventive factor in dislocation. This, I consider, is erroneous. As far as prevention of dislocation or fracture-dislocation is concerned, the muscles play absolutely no part whatever. As an argument to uphold this statement, I would call attention to the fact that the most frequent point for fracture dislocation is between the fifth and sixth cervical vertebræ. Let us turn to the anatomy of the muscles in this region. The muscles whose attachments lie directly over the junction of the fifth and sixth cervical vertebræ are the multifidus spinæ, the semispinalis colli, the complexus, the trachelomastoid, the transversalis cervicis, the cervicalis ascendens, the scalenus medius, the scalenus anticus, the rectus capitis anticus major, and the longus colli. Here, then, we have eleven muscular attachments covering this articulation on each side, twenty-two in all, and yet it seems to be the point of election for fracture-dislocation in the cervical region.

We find the spinous processes more frequently broken from the fifth cervical to the end of the thoracic vertebræ. Gurlt[5] says that in the cervical region in less than one-quarter of all cases, and in the thoracic in more than one-half of all cases, the spinous processes are broken. In the thoracic region, on account of the peculiar tile-like arrangement of the laminæ, above referred to, when one lamina is fractured, usually several are fractured with it. This, of course, does not refer to gunshot fractures. The spinous processes in the lumbar region, according to Gurlt, are fractured in less than one-eighth of all cases. As a rule, transverse and oblique fractures of the vertebral bodies are nearer the upper than the lower surface. Isolated fractures of the articular processes are extremely rare.

Although, as stated above, the muscles of the spinal column play no part in its protection from fracture, yet there are a number of cases on record where fracture has been caused wholly by muscular action. One of these cases, reported by Gurlt, happened in this peculiar manner. A sailor, going in bathing from the deck of a ship, dived and while his body was shooting downward, he realized that there was not enough depth of water for him to escape an accident. For this reason, and in order to save himself, he threw back his head with all his force as he struck the water and sustained a fracture in the cervical region. Another case, likewise reported by Gurlt, was that of a man violently insane who, for purposes of restraint, had to be tied in an armchair. In this position he made strenuous nodding movements of the head, endeavoring to loosen his bonds. He also sustained a fracture in the cervical region.

4. Trans. Am. Surg. Assn., 1905.

5. Handb. d. Lehre v. d. Knochenbrüchen, Hamm, 1862.

Philipeaux,[6] in his fracture experiments on the cadaver, found that the most frequent point of fracture was between the eleventh and twelfth thoracic vertebræ, the fracture being the usual variety from posteriorly and above to anteriorly and below. Experiments of this nature on the cadaver fail so completely to reproduce the conditions present in a spinal fracture accident, that this finding of Philipeaux' is not of great importance as a comparison to the statistics of spinal fracture-dislocation in the living subject.

Gurlt classifies fractures of the spine as follows: (1) Fracture of the first and second cervical vertebræ; (2) fracture between the third cervical and the second thoracic vertebræ; (3) fracture between the third thoracic and the second lumbar vertebræ; (4) those below the second lumbar vertebræ. He does not think that fractures of the first class are necessarily immediately fatal, unless there be a pronounced dislocation. He cites the case of a patient who lived eight days. These patients die because of making some sudden voluntary or involuntary movement which displaces the vertebræ or fragments and causes pressure on the upper cord or the medulla oblongata. Gurlt calls attention to the fact that in none of the cases he cites, in which there was a fracture of the odontoid process, was there also a tearing of the ligamentum transversum dentis, although in several cases there was considerable displacement.

He cites an interesting case quoted by Sir Astley Cooper.[7] A syphilitic woman, under mercurial treatment, suddenly, while eating breakfast in bed, had her head fall forward on her chest and was dead. A fracture of the odontoid process was found. Another patient of Cline's[8] had a fracture of the atlas, and for one year aided all neck movements with his hands in order to prevent injury to the medulla oblongata. In these two cases, and in five others, making seven in all, there was fracture of the first or second cervical vertebræ or both. One patient died instantly. Another patient lived two months. Two patients lived five months. Still another patient lived eleven months. Another lived twelve months and still another twenty-eight months. In only one of these cases was there any disturbance of the integrity of the joint between the atlas and the occiput. This joint is tremendously strong, as anyone can testify who has endeavored to remove the head at the occipito-atloid articulation. The dislocation of the atlas on the axis occurs in death by hanging. I present herewith, a photograph of such a dislocation involving both articular processes. This specimen is in the Mütter Museum of the College of Physicians. The case was one of suicide by hanging. The spinal cord was found crushed, although the spinal canal was not reduced in area at the point of luxation more than about one third (Fig. 2). In the cases enumerated by Gurlt, where the fractured odontoid process injured the medulla, it did so by the backward pressure of its lower fractured surface.

When fracture occurs involving the phrenic nerve, death is usually very sudden from paralysis of respiration. There are cases where the patient lives a longer or shorter time with only a partial inconvenience in breathing. This may point to a partial lesion lower down in the cervical region, but some untoward movement will convert a possible simple fracture to a fracture-dislocation with involvement of the phrenic nerves, and the patient drops dead.

In injuries to the spinal column, the spinal cord can be injured in a number of ways. I have already mentioned the possibility of its being transversely squeezed, or even cut in two. There are also cases on record where the plane of injury is oblique rather than transverse. In one case, reported by Gurlt, the spinal cord seemed to be wedged into a longitudinal cleft in the posterior aspect of the body of the fifth cervical vertebra.

I herewith give the histories of nine cases of injury to the spinal cord. Six of these were consequent to fracture-dislocation. One case was caused by a gunshot wound. One case was a pure, self-reducing dislocation without fracture; and one was consequent to spinal concussion without spinal lesion. For the pathologic material of these cases I am indebted to Dr. William G. Spiller, who has most kindly put at my disposal the material bearing on this subject in his laboratory. One of these cases was reported by Dr. C. S. Potts, another by Dr. Spellisy, and a third by Dr. Spiller and Dr. Martin. In the clinical histories of these cases there will be noticed many statements that seem vague, indefinite and careless. There will frequently be apparent glaring omissions of data which, for the scientific consideration of the case in question, are most important. These shortcomings will be easily understood and condoned by those who realize how very faulty is the system of history taking in many of our large institutions where the resident physicians are constantly changing and rarely ever interested.

CASE 1.—Male, aged 25 years, laborer, born in Italy, was admitted to the Polyclinic Hospital, Nov. 17, 1899, with the history that a bank of earth had fallen on his back. On examination there was discovered a paralysis of both lower limbs and loss of sensation up to a "short distance" above the umbilicus. There was likewise a prominence of "several of the lower dorsal vertebræ." At 11 o'clock that night Dr. Roberts performed a laminectomy under ether anesthesia.

Patient died July 27, 1903. No notes on his immediate antemortem condition can be found. The full postmortem record does not particularly bear on this study; therefore I shall not quote it.

This case had skilful surgical treatment at once. The kyphosis was reduced, and all refinements of technic were used. And yet, here, as in so many other similar cases, the element of uncertainty is present as to just how much of the future difficulty was due to the fracture dislocation and how much to an unavoidable manipulation of the spinal cord on the part of the surgeon.

The microscopic examination of the spinal cord by the Weigert hematoxylin method showed complete disintegration in the level of the sacral region. Opposite the seat of compression, the tenth thoracic vertebra, there is great destruction and distortion of the white and gray matter. There are large irregular areas of degeneration, a small amount of normal white matter being left, chiefly in juxtaposition to the gray matter. This is particularly so in the middle root zone on one side. There is also on one side a preservation of many normal white fibers situated between the posterior horn of gray matter and the periphery of the cord, in the area of the direct cerebellar tract. A segment above the tenth showed an intense degeneration in the columns of Goll, in the direct cerebellar tract and in Gower's tract. Marchi preparations show no system degenerations, but some black dots still remain along the blood vessels.

CASE 2.—Man, aged 38 years, colored, married, born in Maryland, was brought to the Philadelphia Hospital from the Jefferson Hospital, where he had been for three weeks following an accident to his spinal column. With the exception of

6. Revue Médico-chir., t. xi, 1852, p. 178.
7. A Treatise on Dislocations and on Fractures of the Joints, new edition, by Bransby Cooper, London, 1842, p. 536.
8. A Treatise on Dislocations and on Fractures of the Joints, new edition, by Bransby Cooper, London, 1842, p. 533.

the facts that he had been a heavy drinker, and that he denied venereal disease, his past history is not relevant.

On June 7, 1901, while at work, he fell from a ladder a distance of thirty feet, striking on his back. He was taken to the Jefferson Hospital unconscious. He regained his consciousness late on the same day, but was delirious and had to be restrained by straps for three or four days. When he eventually became rational, it was found that there was complete paralysis, both sensory and motor, of the lower extremities, upward as far as the upper border of the pubes and encircling the body. Incontinence of urine and feces came on about one week after the accident, both micturition and defecation having been unimpaired up to this time. There was a very tender protrusion over the lower dorsal and lumbar vertebræ, which was the seat of severe pain on motion. There was a bed sore over the lower part of the vertebral column.

Dr. Spiller's notes, dated July 1, 1901, state that there was complete paralysis in the lower limbs, the patient being unable to move a muscle "even with the greatest exertion." The lower limbs were flaccid and without contractures. The knee jerk, Achilles jerk and Babinski reflex were all absent on each side. There was no priapism. Irritation of the sole of the foot produced no toe movement, and the cremasteric reflex was not obtained.

Dr. Spiller's diagnosis was: "The man has signs of complete interruption of the spinal cord in the lower thoracic region. The probable cause of this interruption is fracture of the lower thoracic vertebra." On July 11, dulness, singultus and free perspiration were reported. On July 12, it is recorded that hiccough had been present almost constantly, that there was pain in the umbilical region, and that on irrigation of the bladder much dark brown fluid and detritus returned through the catheter. The patient died at 8:45 p. m. July 14, hiccough having been present constantly, except for short intervals, three days before death. There was much albumin reported in the urine.

I shall omit the general necropsy notes, with the exception of a quotation on the kidneys, ureters and bladder, to-wit: "Ureters dilated, especially on the left side, where ureter reaches size of index finger. Kidney enlarged, capsule adherent and adhesions to surrounding tissue. On removal of capsule, numerous abscesses were found in the substance of the kidney. Pelvis dilated, and both pelvis and ureter contain creamy pus. The right kidney enlarged, less than the left; capsule peels readily; no abscess in cortex. Bladder is distended; contains thick yellowish pus."

From Dr. Spiller's dictation at the autopsy I quote the following: "The scar of an old injury, 4.8 cm. long, the cicatrix of which is directly over the spine of the eleventh thoracic vertebra, extends on to the tenth and twelfth vertebræ. The spinous process of the tenth vertebra is driven downward. The surface edge shows an irregular loss of substance, affecting also the entire superior surface. The interval between the tenth and eleventh spinous processes is increased. Beginning 5 millimeters from the superior surface of the spine there is an irregular fracture line extending laterally on each side and passing through the corresponding laminæ. The right lamina is prominent and shows the chief injury. The fracture on this side extends downward and forward through the entire diameter of the lamina. The tissues about the lamina are edematous and slightly hemorrhagic. On the left side the tissues are involved to a slighter extent, but the remains of the hemorrhage are found in the fascia and spinal muscles. The fracture extends through the upper portion of the body of the tenth thoracic vertebra, so that the two portions of the vertebra move freely one on another. The spinal cord apparently is completely compressed at the line of fracture, and is softened for a distance of 4 cm. above the line of fracture. The softening at the line of fracture may have been produced at the autopsy.

The cervical region shows no gross lesions. The dura below the line of fracture is much injected, much more so than above the line of fracture." Spiller founds his paper,[9] "The Sensory Segmental Area of the Umbilicus," on this case.

9. Phila. Med. Jour., Feb. 8, 1902.

I wish to call attention to the urinary condition in this case. In many cases of fracture-dislocation involving the lower thoracic region of the spinal column hematuria is a common symptom. This is, at times, caused by trauma to the kidney substance. But there are likewise many of these cases in which the kidney is uninjured and yet hematuria comes on the second, third, or fourth day, or even later. Wagner and Stolper,[10] in speaking of the temporary suppression of urine often seen immediately following spinal fracture, advance the theory that this suppression is due to the fact that consequent to the attraction of blood to the lower limbs, on account of the vasomotor palsy of these parts, there is produced in the kidney substance a traumatic anemia. This anemia causes a great lowering in vitality in the kidney parenchyma which proceeds in many cases to the absolute death of the epithelium lining the tubules. These investigators found this condition of affairs two hours after the accident.

It seems to me that the hematuria above referred to may well be explained on the same hypothesis: The vascular equilibrium being restored the kidney finds itself supplied with blood, which, on account of a badly damaged parenchyma, it can not handle, and hence the hematuria. I have recently seen this picture in a dog, a portion of whose spinal cord I exsected in the mid-thoracic region. In this animal the hematuria set in on the fourth day after the operation.

CASE 3.—Man, aged 56 years, carpet weaver, born in England, was brought to the Philadelphia Hospital thirty-six hours after falling down stairs. Regarding the decubitus, I quote as follows: "Patient, well-nourished man, lies with fingers flexed, forearm flexed on the arm, the arms elevated about 15 degrees from the body." A slight power of flexion and extension at elbow was preserved, and he could elevate the upper extremities to right angles with the trunk. The act of pronation and supination of the forearms seemed to be accomplished by the biceps muscle, as there was no contraction of the supinator longus when this motion was executed. There was no paralysis in either upper or lower extremities. The plantar reflexes were slight, the big toes flexing. The knee jerks, Achilles tendon jerks, cremasteric, epigastric and abdominal reflexes were all absent. The cilio-spinal reflex was present. There was a marked retraction of abdominal muscles in respiration. At times his penis became partially erect. The patient complained of pain in the back of the neck. There was a tenderness extending over the seventh cervical and first thoracic vertebræ. A bed sore had begun over the right trochanter and also one over the scapula. The prick of a pin was followed by a persistent hyperemia of the skin. The patient could slightly rotate his arms outward.

At the postmortem examination a fracture of the skull was discovered over the left parietal and temporal bone, beneath which was an extradural blood clot, 8 cm. in diameter and having a maximum thickness of 1.5 cm., situated mainly over the motor area. There was no subdural hemorrhage and the ventricles were normal. The spinal cord exhibited a depression which corresponded to the body of the fourth cervical vertebra, which had been slightly displaced backward. The depression was so deep that the cord appeared as if entirely severed. Dr. Spiller's notes read: "Compression seems to be between the sixth and seventh cervical segments. There were sensory disturbances in the distribution of the fifth cervical segment."

This case is interesting for a number of reasons. In the first place, the mechanics of the fracture-dislocation was the backward displacement of the cervical vertebra, to which I referred in my general considerations. The case was made the subject of a paper by

10. Die Verletzungen d. Wirbelsäule u. d. Rückenmarkes, Deutsche Chir., No. xl, 1898.

Dr. Charles Potts,[11] whose patient he was, discussing the location in the fifth cervical segment of the biceps tendon reflex. Now, bearing in mind that there was complete solution of continuity of the cord at the fifth cervical segment, there was retention of normal plantar reflex and abolition of all the other reflexes of the lower limbs. Also he had partial erection of the penis at times.

The peculiar position assumed by the arms in this case coincides with the position depicted by Thorburn[12] in a fracture-dislocation involving the same segment of the cord. The extreme crushing of the cord in this case is

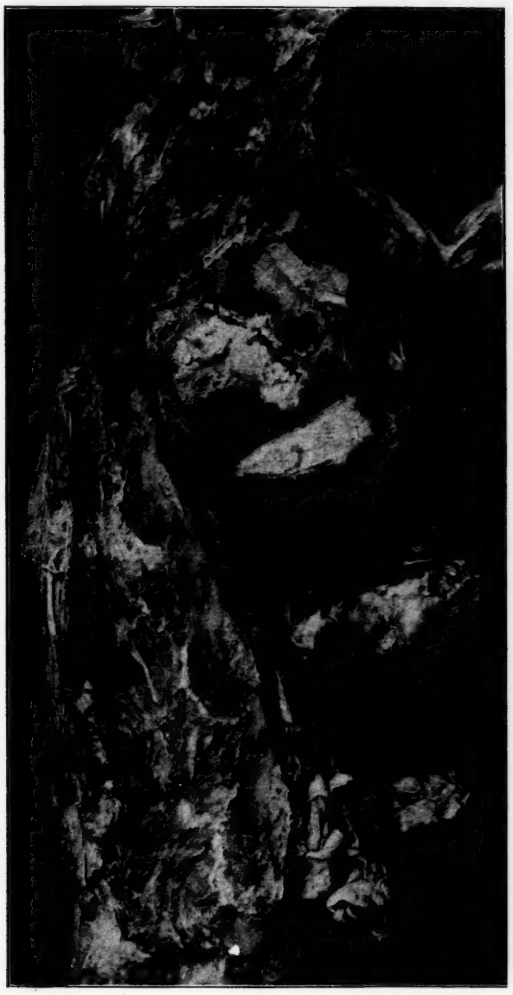


Fig. 1.—Case 4. Fracture-dislocation of the ninth and tenth thoracic vertebræ.

owing to the remarkable attenuation which the cross section of the vertebral canal suffers in these cases where the displacement is backward in the cervical region.

The question of the preservation or loss of the plantar reflex in cases of complete lesion of the spinal cord is, at present, a model one. J. J. Thomas[13] says that in complete transverse lesion of the cord the plantar reflex is often retained.

Unquestionably, the majority of cases of complete transverse lesion reported have abolition of the plantar reflex. There is probably some other equation in the preservation or loss of this reflex other than complete solution of continuity.

The question of erection of the penis in cases of spinal cord injury is possibly more unsettled than it was a few years ago, when it was generally accepted that the center of erection and ejaculation as well as for the detrusor of the bladder and the rectal mechanism were all located within the cord. Lately some evidence points to the fact that these centers are largely, if not wholly, extraspinal, being possibly in the hypogastric and hemorrhoidal plexuses of the sympathetic. There are, nevertheless, many who defend the intraspinal location of these centers.[14] Wagner and Stolper speak of priapism in cases of injury to the spinal cord as of purely vasomotor origin when the lesion is above the erectile center. This center they locate in the second sacral segment. They differentiate between erection in the sensual sense and a soft, semi-flaccid turgescence. The former depends on a stimulation of the motor neurones for the ischiocavernosus, transversus perinei, and bulbocavernosus muscles. The soft turgenscence, with our incomplete knowledge, only points to a spinal lesion. In other words, we are unable to say that *the one symptom points to complete transverse lesion, the other to incomplete.*

CASE 4.—Man, age, nativity, etc., unknown, was admitted to the Philadelphia Hospital, Feb. 13, 1903, with the history that about ten months prior to this date he was crushed, an injury to his spine resulting. Since this time any motion involving the spinal column caused pain. His knee jerks were exaggerated, ankle clonus was present and the Babinski reflex was obtained on the right side.

With a few minor exceptions, there is a gap of almost two months in the history. On April 10 it is entered on the chart: "Patient operated on at 1:30 p. m. An incision over dorsal vertebræ was made about eight inches long and a laminectomy done." Just why this patient was operated on is not indicated. There is no history, recorded or unrecorded, that he was getting worse prior to the operation. A vertebra was found displaced and rotated, to which the cord was bound on the left side of the canal by dense adhesions. The cord was found to be softened at the site of the luxated vertebra. On April 11 (the day after the operation) it is noted that the patient on examination showed a loss of sensation in the left leg and the lower third of the thigh; also in the right leg to the knee. Also, "Patient is unable to move toes of either foot." On April 16 it is noted that the patient seemed unimproved. It was necessary to catheterize him since the operation, and his bowels would not move without an enema. It was impossible to keep the skin on the patient's back in a healthy condition. On April 19 the patient was still unable to void urine voluntarily, and this retention obtained until October 25, when it is noted that incontinence had occurred. On May 2 it is recorded that he "can not move lower extremities at all."

Here occur great gaps in the history, with a few unimportant observations. I quote Dr. Spiller's notes of July 23, 1904, ten days before the patient's death: "lower limbs are extremely wasted. The only movement possible is a slight drawing upward of the limbs on either side, but there is no flexion of either limb.

In a long postmortem record there is noted: "Necrotic ab-

11. A Case of Traumatic Cervical Hematomyelia and Complete Division of the Cord, with Probable Dislocation of the Fifth Cervical Vertebra, Remarks on the Location of the Center for the Biceps Reflex, Jour. Nerv. and Ment. Dis., 1905, vol. xxxii, p. 359.
12. A Contribution to the Surgery of the Spinal Cord, 1889.
13. Five Cases of Injury of the Cord, Resulting from Fracture of the Spine, Med. and Surg. Reports of the Boston City Hospital, Series xi, 1900, p. 1.
14. E. Reichert, in a personal communication.

scess formation of seventh, eighth and ninth dorsal vertebræ." The microscopic examination of the spinal cord shows by the Weigert hematoxylin method well-marked degeneration in the columns of Goll, in Gowers' columns and in the direct cerebellar tract (Fig. 3). The method of Marchi shows degeneration in Goll's column and also a few black dots in Gowers' column on the right side. Numerous fat crystals were found in the columns of Goll above the lesion in the Marchi preparation, which I shall discuss elsewhere.

It appears evident that, on admission to the hospital, the patient had not an absolute solution of continuity in the spinal cord, in fact there must have been a goodly amount of normal functionating axons bridging the seat of injury to account for the amount of motor and sensory function still intact. The fact that this condition of affairs obtained ten months after the accident should be enough to warrant the prognosis that the acute degenerative changes had extended as far as they were going to extend, and barring future trauma and the very slow sclerotic changes, the probabilities were that he would have remained *in statu quo*. The operation in this case, can not therefore be defended by even the most radical advocates of the knife.

The injury the surgeon is able to do to the spinal cord in these cases is here demonstrated beautifully. From a chronic condition, at rest, the case was converted again into an acute condition, the results of the operation being loss of bladder and rectum control, loss of motor and sensory function, and a tendency to bed sore formation.

Fig. 2.—A dislocation of both articular processes of the atlas on the axis. Suicide by hanging. (Specimen from the Müttér Museum, College of Physicians, Philadelphia.)

CASE 5.—Man, aged 59 years, colored, born in Delaware, was admitted to the Philadelphia Hospital, Jan. 2, 1905, with the history that he had fallen from a wagon and had struck on his head. After the accident he was able to walk with assistance for about one hour, when his lower limbs became completely paralyzed. He had a loss of tactile and temperature sensation in the lower limbs and on the trunk extending up to above the third rib. Above this there was a band of hyperesthesia. He was able to move his arms, but was unable to flex his fingers or move his thumbs. His third rib on the left side was "dislocated" at its sternal junction. He answered questions coherently. He had, on admission, retention of urine and feces and complained of pain in his neck. There are no further notes on the case during life. The patient died January 3.

The following is quoted from the postmortem record: "Fracture of sixth cervical vertebra, body. Fracture of the laminæ of the fifth and sixth cerevical vertebræ. Ligamentous rupture between sixth and seventh spinous processes of the cervical vertebræ, also between second and third dorsal vertebræ. Transverse fracture of sternum. . . . The musculature over the sixth, seventh and eighth cervical vertebræ infiltrated with blood. . . . The part of the cord overlying the fracture is slightly compressed and softer in consistency than portions either above or below." Here follows a rather involved description of a fracture of the skull, the exact localization of which is not evident, but which is obviously considerable in extent from this quotation: "Subdural hemorrhage in the left anterior fossa, left middle fossa and right posterior fossa. There is an irregular macerated area involving the inferior frontal and middle convolutions of the left side."

Sections were made from the second or third, the sixth, seventh and eighth cervical regions and also from the first and second thoracic regions. They were stained by the hemalum acid-fuchsin and Weigert's hematoxylin methods. The sections from the highest block of tissue, either second or third cervical, appeared normal. At the level of the sixth cervical segment there appears a hemorrhage in the gray matter on both sides of the cord and also in the anterior commissure. These hemorrhagic foci are all distinct and separate. There is great injection of the anterior central branches of the anterior spinal artery, and in the eighth cervical segment this pressure has been so great that there appear minute areas where the red blood corpuscles have broken through the wall of the blood vessel and are lying free in the anterior fissure. In the upper part of the seventh cervical segment the hemorrhages found in the segment above are not present. There exists here simply an overdistension of the central branch of the anterior spinal artery, with a leakage from this vessel of red blood cells into the margins of the anterior columns of the cord.

Fig. 3.—Case 4. A section of the spinal cord in the mid-thoracic region showing intense degeneration in the columns of Goll and also some degeneration in the direct cerebellar and Gowers' tracts. (Weigert preparation.)

In the lower part of the seventh cervical segment there is a rupture of an artery in the anterior gray commissure, the hemorrhage extending directly backward into the posterior columns for about one-fifth their depth. There is also in this level a very minute hemorrhage in the center of the gray matter of one anterior horn and the central branch of the anterior spinal artery is greatly distended. In the eighth cervical segment the entire gray matter is hemorrhagic, the extravasations extending into the contiguous white matter. The first thoracic segment is the same as the eighth cervical, except much more pronounced and here there seem to be hemorrhagic processes in the white matter of the lateral and posterior columns (Fig. 4). In the second thoracic segment the hemorrhage is not found in the white matter and, except for one minute focus in one anterior horn, is confined altogether to the other anterior horn.

This case brings up the very interesting subject of traumatic hematomyelia. This condition is frequently found in cases of fracture-dislocation where the spinal cord has been pressed on; it is also found in cases of severe spinal concussion where there has been no fracture and no crushing violence to the spinal cord. Much speculation has existed as to the cause of traumatic hematomyelia and why the gray matter is so preponderatingly chosen as the seat and limit of the hemorrhage. As a rule, the hemorrhage is not multiple and although found in different parts of the gray matter in different levels of the cord, still, if examined in serial sections, a continuity will often be demonstrated among the several seemingly separate foci. Pearce Bailey has published a classical case of multiple hemorrhages into the cord.

The consensus of opinion seems to be that the hemorrhage is caused by the commotion in the cord substance, and is located in the gray matter on account of its weaker and softer consistence. That the gray matter has less cohesive strength is axiomatic. But I take it that the hemorrhage in traumatic hematomyelia is of purely hydraulic origin. There is usually in these cases a marked flexion of the spinal column, and consequent forcing of blood into the anterior fissure of the spinal cord. As this causes an hydraulic expansive force in the central arteries from the anterior spinal artery, and as the distribution of these arteries is practically wholly within the gray matter, the reason for usual limitation of the hemorrhage to the gray matter is obvious.

My explanation for those cases of traumatic hematomyelia where there has been simply concussion of the spinal column without hyperflexion or fracture is likewise on the hydraulic hypothesis. That homely and painful practical joke, in which we have indulged in youth, of knocking together two stones under water when another boy is completely submerged demonstrates on our tympanum the absolute incompressibility of liquids and the terrific force which can be brought to bear by a seemingly insignificant means. Although the blow usually comes on the posterior aspect of the spinal column, yet the greatest hydraulic action is felt in the anterior spinal artery because of its being a more direct and straight blood channel than any found on the posterior surface of the spinal cord. The difference between the posterior and anterior blood supply to the spinal cord I have referred to elsewhere.[15]

It seems to me the views of Kadyi[16] that the small arteries of the anterior fissure pass to one side or the other, rarely bifurcating, explain why it is that one finds in serial section study of a case of traumatic hematomyelia the so frequent shifting of the seat of hemorrhage from one side to the other. Without doubt the hydraulic pressure extends over a distance sufficiently great to take in at least two of these median branches from the anterior spinal artery.

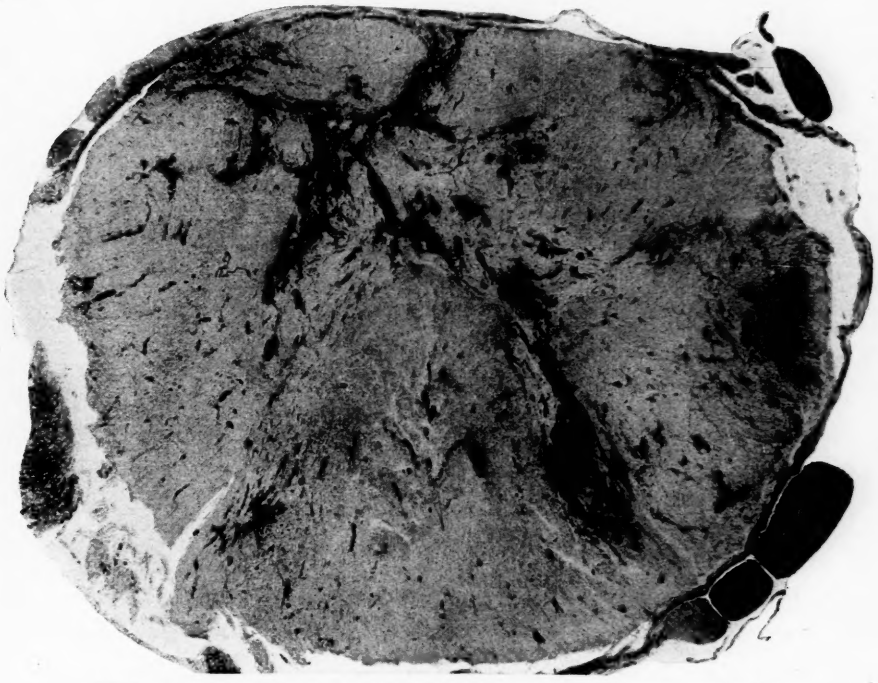


Fig. 4.—Case 5.—A section of the spinal cord at the first thoracic segment, showing intense hemorrhagic condition. (Weigert preparation.)

CASE 6.—Man, aged 32 years, a miner, born in Italy, was brought to the Philadelphia Hospital on Dec. 22, 1905, suffering from a paralytic condition consequent to a gunshot wound of the spinal column received two months prior to admission. His past history was negative. He denied venereal infections, but owned to having used a great deal of alcohol without ever becoming "very intoxicated." The point of entrance of the bullet was just above the insertion of the deltoid muscle in the left arm. The humerus was fractured. On receipt of this injury he fell, having no power in his lower limbs. One month after his wound he began to have shooting pains in his lower limbs and a bed sore began to develop over his sacrum.

15. Combined Pseudosystemic Disease, with Special Reference to Annular Degeneration, Univ. of Penna. Med. Bull., January, 1905.
16. Ueber d. Blütgefässe d. Menschlichen Rückenmarkes, Lemberg, 1899.

On January 2, after an *x*-ray examination, in which the bullet was located, the patient was operated on, an exploratory laminectomy being done. The fourth, fifth and sixth thoracic spines were removed, but the bullet was not found. The patient lived until February 22. During this time he gradually grew weaker. The wound proved very refractory and there remained several sinuses leading to the spinal cord.

The history records, after the operation, an incontinence of urine and feces, but whether this condition obtained before the operation is not indicated, but probably it did. There is also noted on February 10 that there was a "large bed sore over the right hip, exposing the trochanter and eight inches of the shaft of the femur."

At the autopsy the bullet was found imbedded in the body of the fourth thoracic vertebra, where it had been located by the *x*-ray.

The microscopic examination shows an intense degeneration by Marchi's method at the level of the lower part of the pyramidal decussation in Goll's columns, in the direct cerebellar columns and in Gower's columns. In the eighth cervical segment there is a degeneration of some of the anterior cornual cells, also there is seen here by Weigert's method degeneration in the columns of Goll and the direct cerebellar and Gowers'

Fig. 5.—Case 7. A section of the spinal cord about 2.5 cm. (fourth block) below the seat of compression, showing area of central softening and two areas of degeneration peripherally and symmetrically situated. (Weigert preparation.)

tracts. Both Weigert's hematoxylin and Marchi preparations show degeneration in both crossed pyramidal tracts in the lumbar region. Sections from the seat of compression show complete disintegration of the spinal cord, only a few irregularly scattered groups of axis cylinders remaining normal and intact, and these mostly at the periphery of the spinal cord. The degeneration, when followed up into the medulla by the Marchi method, shows very beautifully the parting in different directions between the direct cerebellar tract as it swings back into the restiform body and Gowers' tract, continuing upward.

This case introduces an important point which is frequently brought up in arguments pro and con laminectomy in cases of spinal fracture-dislocation. One of the chief reasons advanced by the surgeon or surgically inclined neurologist for operating in these cases is, as Burrell says, "that if pressure on the cord is allowed to remain for many hours, irreparable damage to the cord may take place." This statement would infer that the immediate removal of pressure would tend to prevent the "irreparable damage to the cord," which idea is wholly fallacious. The spinal cord in this case had barely been grazed by the bullet, the dura mater being intact and without abrasion. The bullet had lodged in the vertebra and was exerting no pressure whatsoever on the spinal cord. Therefore, whatever injury obtained resulted from the instantaneous pressure of the bullet in passing, a pressure indenting possibly the dura but not enough to abrade or tear it, and then absolutely removed. And yet, note the wholesale destruction of cord tissue in this case. It seems to me that in weighing your data pro and con operation in these cases, the pressure of fragments should not be the reason for a rapid operation. If a fragment has exerted pressure sufficient to cause degeneration, that degeneration will take place and be as immutable one second after the reception, of the injury as it would be one week after. When the dura was opened in this case the cord was found completely softened.

CASE 7.—Man, aged 38 years, an iron worker, born in America, was brought to St. Joseph's Hospital, Oct. 14, 1906. Dr. Spellisy, whose patient he was, has kindly furnished me with the following brief facts: The family history was negative, as was also his past history. On the date of his admission he was working on a scaffold, when it gave way and he fell a distance of thirty feet. What part of his body struck the ground is not known. He did not lose consciousness, but was unable to get up. He complained of pain in his arms and

Fig. 6.—Case 8. A section of the spinal cord immediately above the seat of compression, showing intense degeneration and disintegration of cord substance. (Weigert preparation.)

upper part of back. This pain he described as like red-hot irons going through his arms.

He was a well-nourished and well-built man. There was loss of sensation up to the second rib, the limiting line of anesthesia circling the body horizontally. He had retention of urine and incontinence of feces. There was a slight laceration of the scalp. The eyes were normal. The loss of the sense of pain extended above the loss of tactile sensation. Knee jerks and plantar reflexes were absent. There was a loss of the power of the flexors of the fingers. The patient gradually lost ground and died October 31.

I received the pathologic material in the shape of a portion of the spinal column, including two vertebræ below the point of fracture-dislocation and six vertebræ above. Judging from the topography of the gray and white matter of the highest segment, the legion involves the upper part of the thoracic cord. For a distance of about four centimeters the cord is absolutely softened, having been nipped between the posterior-superior edge of the vertebral body next below the luxated vertebra and the arch of the dislocated vertebra. From a point one and a half centimeters below the point of constriction to fully five centimeters distal there was an area of soft-

ening occupying the posterior part of the left anterior horn and extending backward into the posterior horn to within a short distance of the periphery.

The three and one-half centimeters of cord were divided into five pieces and mounted in celloidin and cut. They were numbered from below upward. Block 5 shows an area of degeneration in the white matter at the periphery on the side opposite to the cerebral softening. This area is small and is situated at what might be the junction of the direct cerebellar and Gowers' tracts. In Block 4 (Fig. 5) there is, in addition to this same area, a similarly situated area of degeneration on the other side. These areas are true degenerations, showing swollen axis cylinders. They were probably caused by the injury inflicted to the cord by stretching it over the posterior surface of the body of the vertebra next below the vertebra luxated. In Block 3 this degeneration is not present. The photomicrograph shows the area of central softening together with the degenerations as found in the fourth block. Had it been possible to cut and stain an entire unbroken set of serial sections through this part of the cord, doubtless one would have found occluded or damaged blood vessels to account for the central softening.

CASE 8.—A young student was brought to the University Hospital, March 15, 1906, with the following history: He had been wrestling in a gymnasium, and his opponent, having gotten his head on the mat, was endeavoring to force the shoulders down also. Without any sudden wrench the patient collapsed and was in a perfectly limp condition. Afterward he stated that he had experienced a sensation as if something had broken. There was diaphragmatic breathing, motor and sensory paralysis, the area of anesthesia extending well above the umbilicus, and there was also priapism and loss of reflexes. The grasp of each hand was weak, but the motions of the arms at the shoulders were normal. There was tenderness on pressure over the sixth cervical vertebra, but no deformity.

The patient died, March 30, from "pulmonary edema and general exhaustion."

Operation was not resorted to in this case, owing to the hopeless outcome which was indicated. In a letter to Dr. Spiller, Dr. Edward Martin, who also saw the patient in consultation, said: "I have not accentuated a feeling that I had then and still have, that it is a rather good thing to go into these absolutely hopeless cases on general principles with the idea of finding, perhaps, the one in a thousand who can be helped."

The autopsy discovered a luxation of the seventh cervical vertebra which had been reduced spontaneously. There was no fracture. The cord had been completely crushed. Dr. Spiller's notes were as follows: "There was an adhesion between the posterior part of the dura and the lower part of the seventh cervical vertebra. The seventh cervical vertebra was a little displaced on the first thoracic. There was a slight protrusion backward of the body of the seventh cervical vertebra which was visible when the cord was removed. The body of the seventh cervical vertebra was very movable. No hemorrhage anywhere. The cord was swollen above and below the seat of compression. The compression is very marked and is at the extreme upper part of the eighth cervical segment.

Sections for microscopic examination were made immediately above the level of the compression (Fig. 6). There were areas of softening in the lateral, posterior and anterior columns on both sides, together with a great comminution of the white matter. Only the part of the cord immediately involved at the seat of injury was allowed to be taken at necropsy. This case was presented by Dr. Spiller and Dr. Martin before the Philadelphia Academy of Surgery.

This case may be classified among the pure dislocations. As stated, it was self-reducing. The injury was completed in the twinkling of an eye, and yet, note from the picture the obvious cord destruction. This appearance is typical of this class of injury, the cord looking as though it had been constricted by having a string tied around it. The terrible destruction of tissue above and below the seat of injury is shown in the accompanying illustration. Although the history records priapism as a pronounced symptom, I am told by Dr. Spiller that semi-flaccid turgescence would more accurately described the condition.

The following case was reported by Dr. Spiller.[17]

CASE 9.—A man, aged 46 years, fell eight feet out of a window and struck on his face. He remained on the ground unconscious for several hours after his fall before being found. His examination revealed that he had no control over his bladder and rectum. He could draw up his lower limbs, but the movement was much impaired. The knee jerks were present, but not exaggerated. The Babinski reflex was uncertain. The voluntary movement of the upper limbs was much impaired. He could not move the fingers of either hand, but could move his arms at the shoulder and elbow joint imperfectly. Sensation for touch was normal all over the body. The sensation for pain and temperature was much impaired in the lower limbs and over the trunk anteriorly and posteriorly as high as the base of the neck. There was also some impairment of pain and temperature sensation in the upper limbs, but not so much as in the lower.

The seventh day after his accident the patellar tendon reflex on the left side was absent and on the right was feeble. The Babinski reflex was present on both sides. The fourteenth day after the accident it is recorded that the restoration of power to the lower limbs was remarkable. On the thirtieth day after the accident he could make feeble extensor and flexor movements of the fingers of each hand. He died thirty-eight days after the accident.

In this case were found two distinct foci of disease: First, a traumatic myelitis which Spiller defines as a degeneration affecting the nerve cell body and the nerve fiber, together with a round-cell infiltration, proliferation of neuroglia, congestion of blood vessels and miliary hemorrhage. This affected the fourth, fifth and sixth cervical segments. Second, a degenerative change in the cell bodies of the anterior horns which was much greater in the eighth cervical segment than elsewhere. The hemorrhages were too minute to be detected with the unaided eye.

On account of the findings in this case Spiller says he considers that it is impossible to make a differential diagnosis during life between hematomyelia and traumatic myelitis.

The limitation of time and space prevent me discussing spinal localization, the reflexes and motor and sensory paralysis.

The treatment of a case of spinal fracture-dislocation if often rendered much more difficult than it otherwise would be by reason of the ignorant ministrations of the well meaning laity present at the time of the accident. When a man receives an injury of the back which renders him unable to arise, he should be carefully placed on a flat stretcher, preferably one extemporized by boards and not soft and yielding. Care should be taken to preserve as nearly as possible the position of the body as originally found after the accident, unless the position threaten life. This can only be done by bolstering up certain parts with pillows or better still extemporized sand-bags or mounds of earth. Absolutely no attempt should be made to straighten out his body until his clothes have been cut from him, and then only by an experienced physician. After the patient has been duly examined, it is well to pass a catheter as soon as possible, under strict aseptic precautions, and empty the bladder. In this way one is able to judge more accurately of the functional ability of the kidneys during the first twenty-four hours. If the patient be delirious morphin is indicated to counteract a restlessness which might displace a fragment of bone and so wound the cord. If given hypodermically, care must be taken not to give it in an area which shows a circulatory stasis or

17. American Neurological Association, 1902, Traumatic Lesions of the Spinal Cord without Fracture of the Vertebræ.

edema, otherwise there will ensue very slow and imperfect absorption and trophic changes might occur.

The question of operation will always be much discussed. I wish to note a few of the justifications which have been advanced for operation in these cases. Tubby[18] says, operation is indicated if there be "pressure from fractured laminæ, or from a process driven inward, or a spicule of bone perforating the theca and cord, hemorrhage and when the cauda equina and lumbar sacral plexuses of nerves are implicated." McCosh[19] says, "(1) The risk of the operation of laminectomy is slight. (2) Early operation is of the greatest importance. Operate before the onset of degenerative changes. (3) . . . (4) Operate rapidly. Employ but few artery forceps or ligatures. (5) Support of the spinal column after operation is generally unnecessary." Burrell says, "An open operation gives definite information as to the condition of the cord and, above all, allows pressure to be removed." Haynes[20] says that all patients who survive the shock of the injury to the spinal cord and its complications should, in gunshot cases, be operated on. The following are the conditions which he thinks demand laminectomy: "(1) To remove the bullet, or spiculæ of bone or particles of clothing; (2) to remove blood clots; (3) to arrest hemorrhage; (4) to allow oozing in traumatic edema of the cord; (5) to prevent pressure and sepsis by drainage; (6) in advancing paralysis; (7) to suture a severed cord." Oliver says to operate where there is "some acute function of the spinal cord. In other cases, those in which there is no such evidence, it is highly probable that nothing is lost by waiting two or three days." Munro suggests a union of the roots above and below the injury in cases where there is division of the cord. Horsley advises waiting a few days and then operating to remove fractured laminæ or projecting portions of the vertebral bodies or at times intervertebral discs.

Tubby's argument as to pressure I have answered above (Case 6). To McCosh's advice relative to the slight risk of laminectomy in spinal fracture-dislocation cases, I can only say that literature teems with cases whose future course after operation is the strongest denial of that statement. No matter what good is to be done mechanically, there is no denying that to operate is to convert a simple into a compound fracture, and the risk of such a measure can never be spoken of as slight, no matter how skillful or aseptic is the operation. As to Burrell's statement anent the definite information concerning the condition of the cord which we gain by open operation, it is really hard to take that seriously. If there is one thing that a laminectomy frequently fails to do, it is to give much or at times any clue to the condition of the cord. (Case 6.)

Spiller[21] answers Haynes' argument in favor of operation by calling attention to the fact that some authorities consider the symptoms of compression due in reality to secondary degeneration. He thinks, moreover, that the removal of an external clot on the cord is of doubtful value, and he questions the good influence of an operation on an edema of the cord following fracture or injury of the spine. The seventh point taken up in Haynes' argument, i. e. "to suture the severed cord," need not be discussed, except to say that the entire weight of all careful observation and evidence is against the possibility of the cut ends uniting so that there ever will be functional continuity between the two ends. This takes into account the several alleged cases of spinal cord suture with partial return of function afterward. M. Allen Starr,[22] denies that repair of the spinal cord ever occurs. He says that scar tissue may form, but that "restoration of continuity of the nerve fibers" is impossible. He gives the weight of his opinion against operating saying that the results are "uniformly disappointing."

Oliver's[23] advice to operate where there is "some acute function of the spinal cord" remaining seems to me diametrically opposed to reason. If one be fortunate enough to have an incomplete lesion of the spinal cord following a fracture-dislocation why run the risk of converting it into a complete lesion as in one of my cases quoted above (Case 4)?

Munro's[24] suggestion of suturing the nerve roots immediately above the lesion to those immediately below is fantastic only because of our lack of experimental data in this direction. He evidently advances that means, accepting the doctrine that axon regeneration is dependent on the nuclei of the neurilemma and can never take place in a cord suture, the cord lacking neurilemma.

The work of Kilvington[25] has lent additional weight to Munro's suggestion. This investigator (Kilvington) sutured in a dog, the central ends of spinal nerve roots leading to the hind limbs to the peripheral ends of the nerves to the rectum and bladder, with successful results. He thinks that nerve crossing would not be feasible in the cervical region in man, but that in the dorso-lumbar region it would be possible. He found from dissection that the second and third sacral roots could be joined to the first lumbar root, provided that the latter be divided as low as possible (where it pierces the dura).

Horsley's[26] views have been so adequately answered by Spiller in his reply to Haynes that I need not further dilate on them.

When are we to recommend operation in cases of fracture-dislocation of the spinal column? In answering this question we must not base our advice on the isolated cases reported in which brilliant results have come after radical operative procedure. These cases are often will-o'-the-wisps leading to disaster because we are as yet too ignorant of the processes of regeneration and spinal surgery to be able to see what factor in a particular case made for success, and in our ignorance we are prone to ascribe it to superlative surgical technic, promptness in operating, etc., factors any one of which is easily within our power and which if they were the true crux of the question would forever set aside the dispute on the subject.

A compound fracture of the spinal column, whether caused by gunshot or other violence is often a suitable case for operation. Here there is not the conversion of a simple into a compound fracture. Do as little as possible in the operation in the way of removal or reposi-

18. Injuries to Spinal Column and Spinal Cord, Clin. Jour., vol. xxiv, No. 25, 1904, p. 385.
19. Remarks on Spinal Surgery with Illustrative Cases, JOURNAL A. M. A., Nos. 9 and 10, vol. xxxvii.
20. Gunshot Wounds of the Spinal Cord, a Plea for Early Myelorrhaphy, with Report of a Case of Bullet Wound Through the Liver, Spinal Column and Cord; Laparotomy; Laminectomy: Recovery: N. Y. Med. Jour., Sept. 22, 29, 1906.
21. Keen's System of Surgery, vol. ii, 1907.
22. Organic Nervous Diseases, 1903, p. 381.
23. Injuries to the Spine and Their Treatment, Cincinnati Lancet-Clinic, 1903, p. 480.
24. Laminectomy, JOURNAL A. M. A., Jan. 6, 1900, vol. xxxiv, p. 12.
25. An Investigation on the Regeneration of Nerves, with Regard to Surgical Treatment of Certain Paralyses, Brit. Med. Jour., April 27, 1907, p. 988.
26. Allbut's System of Medicine, vol. vii, p. 871.

tion of fragments. Of course, should one find a lamina driven into the spinal cord, it would be indicated to remove it, but rather than clear the premises of all existing débris, trust to the natural processes of organization and ankylosis, with the aid of immobilization, to bind the fragments, which one might otherwise tediously dissect away, out of reach of the spinal cord. When the canal is opened the greatest care should be exercised in sponging so that the spinal cord is not forcibly pressed on. A great deal of injury can thus be done. I think it better never to let the gauze pad even so much as touch the cord. Clots of blood can be removed by a stream of warm sterile physiologic salt solution, after sufficient time has been given for the oozing in the small vessels to cease spontaneously.

Scudder,[27] in an attempt to arrive at some conclusion as to the advisability of operating in cases of complete transverse lesion of the cord, does not render the subject more lucid by the following two sentences, which in conflict seem to be past reconciliation: (a) "These specimens . . . demonstrate the utter futility of operative interference in cases of crush of the cord with signs of complete transverse lesion;" and (b) "all fractures showing complete transverse lesion of the cord should be treated by immediate operation."

There seems to be much testimony in favor of operating in fracture-dislocation involving the cauda equina. Thorburn,[12] in his classical work, comes to these conclusions: "The operation of trephining the spine for traumatic lesions, as compared with the condition which it is intended to relieve, does not present any great dangers, and appears unlikely to increase the gravity of the prognosis, but that as both *a priori* argument and the results of published cases show that it is unlikely to be of service, it should be abandoned, except in cases of injury to the cauda equina, and that in the latter, on the other hand, it will probably prove to be an eminently justifiable and serviceable procedure." He says that if improvement has not started in six weeks in cases of injury of the cauda equina he recommends operation. Scudder,[27] speaking on the same theme, says, "If at the end of six weeks evidences of beginning recovery do not appear, or if recovery once begun has ceased, it will be wise to operate on injuries to the cauda equina."

The treatment of the bladder difficulties and trophic disorders must be carried out along the lines of general medicine and surgery. Often in cases of fracture-dislocation of the thoracic region of the spine, the patient will present in due time troublesome meteorismus. This is probably owing to an irritation of the splanchnic inhibitory nerves from the thoracic region of the cord.

DISCUSSION.

DR. WILLIAM G. SPILLER, Philadelphia, called attention to the fact that Dr. Allen had failed to give any conclusions. The subject of laminectomy, he said, is one of great importance, and there is much diversity of opinion regarding the value of the operation. After examining many cases of fracture of the vertebræ clinically and pathologically, Dr. Spiller believes that, in most cases, the operation may do harm. There may be exceptions, but in the majority of cases the patient is better treated by other means than surgical. Although this is contrary to the opinion of some surgeons and some neurologists, Dr. Spiller can not help thinking that it is the correct view. He has expressed his opinion more fully in the second volume of "Keen's Surgery."

DR. ALBERT E. STERNE, Indianapolis, Ind., did not agree with Dr. Spiller. In certain injuries of the spinal column, he said, where the cord is involved in comparatively few instances, it is, in his experience, not the mere fragmentation of the spinal laminæ that does the damage. It does damage, but it is not always the chief factor; often, indeed, it is a secondary factor in the damage. The body of the vertebra is pressing against the cord from the front, and the counter-pressure of the lamina at the rear, wedges the cord between these two osseous obstructions. This really does most of the damage. Dr. Sterne thought that by removing the counter-obstruction and the counter-pressure by surgical measures, we are really doing the patient a great deal more good. The operation ought to be done early. Dr. Sterne realizes that there are a few of these cases that do well without operation, but in his experience, and he has seen quite a number of these cases, operation when done early, is the one measure that gives the very best results. If we delay too long, we can not expect results; if secondary degeneration has set in, we can not expect results. If, in the primary injury, the cord is severed partially or worse, we can not expect to obtain results from operation or anything else. We can not determine this; there is no means by which we can know definitely whether the cord is severed or not. He referred to a case of this kind in which an operation was done. A man was shot through the left lung. The natural assumption was that the bullet had passed through the lung to the right of the spinal column. Dr. Sterne could not feel it with his finger, and he feared that the cord was severed. Three weeks after the shooting the man was absolutely paralyzed, without deep reflexes, with blood in the urine, with all of the symptoms naturally resulting from perforation of the lung, and with extensive bed sores from the point of the injury downward. Dr. Sterne operated, and on removing the bullet, he found the cord absolutely uninjured. The bullet had passed over the spinal cord and was lying against the lateral process almost in the canal, compressing the cord, but without any reflexes from this pressure. After the removal of the bullet the patient made an uninterrupted recovery, in spite of the fact that he had a perforation of the lung. Dr. Sterne knows of no method by which we can say absolutely whether the cord is severed or not, and in lieu of this fact it seems to him that we fail to give the patient every benefit of the doubt unless we determine this by operation. Furthermore, it makes little difference as to the nature of the object causing pressure on the cord—whether foreign body, bone or a blood clot of magnitude.

DR. ALFRED REGINALD ALLEN, Philadelphia, asked whether there was any evidence that the dura had been touched, and was the motor power in that case restored. Dr. Sterne replied that the bullet had passed over the cord, but did not lacerate the dura. It was, however, pressed against the dura and cord by the overlying bone. There was practically no blood-clot within the canal, either above or below the level of injury. Motor power was almost completely restored at the time the patient left his observation and he understands that the man is at present actively at work.

DR. WM. A. JONES, Minneapolis, Minn., believes that patients do better without operation, and he is in perfect accord with what Dr. Spiller said. He has seen patients operated on make good recoveries, and he has seen a number of patients that were not operated on that made practical recoveries; that is, they so far recovered that they were able to perform a number of their duties. In the case of irritation reported by Dr. Sterne in which the bullet did not puncture the spinal cord, Dr. Jones thought that the patient would probably have gotten just as well without operation as by extirpation of the bullet. He believes that too much laminectomy and spinal surgery is being done with more harm than good, except in very rare cases.

DR. H. M. THOMAS, Baltimore, has never been convinced that the operation in cases of this character has been of the least benefit. Perhaps, he said, his cases have been unfortunate ones. The cord symptoms in these cases he believes to be due either to complete destruction by the fracture dislocation, and to be practically irreparable, or to hemorrhage into the cord, which is a condition that has a tendency to improve markedly.

27. The Treatment of Fracture, 5th ed., 1905.

In the cases where the dislocated bones actually compress the cord, it is obvious that an operation is indicated, but apparently these cases are not very common. Dr. Thomas cited the case of a boy who came to the surgical dispensary of the Johns Hopkins Hospital, complaining simply of a stiff neck. He was perfectly well in other respects; had absolutely no paralyses or other nervous symptoms. On examination it was found that one of the spines of the cervical vertebræ seemed to be depressed and an *x*-ray examination revealed a condition that was taken to demonstrate a dislocation forward of the fourth cervical vertebra. The boy was so little incommoded that he did not return to the hospital and has been lost sight of.

DR. CHARLES K. MILLS, Philadelphia, said that his experience, in a general way, is against operation for fractures of the spine; but he did not agree with Dr. Spiller that operation should never be performed in these cases. He has seen a very few instances in which it has been of value. One mistake, which is sometimes made, is in doing the operation too soon after the injury. Operation should be done neither too early nor too late. It should be performed, if at all, within a reasonable period after, but not too far removed from the accident. High operations nearly always prove disastrous; that is, operations on the cervical and upper thoracic vertebræ. Dr. Mills has seen patients who were not operated on and who seemed to be extremely serious if not absolutely hopeless cases, but they made an approximate recovery after a long time.

DR. PHILIP ZENNER, Cincinnati, Ohio, has seen two cases within the last six or eight months that would lead one to hesitate as to operating. One patient, aged 18 or 20 years, in doing some stunts on his bedstead, fell on his head and fractured the fourth or fifth cervical vertebra, as shown by the *x*-ray picture. Examination showed that he had paralysis of both arms, bladder and rectum, and was suffering from extreme pain. Three or four months later all of the symptoms had disappeared. A second patient had been injured very seriously some four months previously in the sacral and lower lumbar region. He had been completely paralyzed, according to his statement, and for a month he could not move his legs at all. When Dr. Zenner saw him one leg was normal, while in the other there was anesthesia and paralysis of some of the muscles of the foot. Such cases, he thought, show that we may be fortunate if we hesitate to operate.

DR. C. C. HERSMANN, Pittsburg, also agreed with Dr. Spiller. However, he can remember when the same was said with regard to trephining. When he was a medical student, the professor advised never to trephine as a rule, but to trephine as an exception. Dr. Sterne, he thought, was either utterly mistaken, or his knowledge was at fault. Among the many cases of spinal injuries which Dr. Hersmann has seen in the last twenty years or more there has been only one patient that apparently recovered. The boy fell out of an apple tree, and "broke his neck." Laminectomy was done, and the boy apparently made a good recovery. However, Dr. Hersmann has seen very few cases of spinal injury benefited after operation, and he believes as many patients would recover without operative interference, as with it.

DR. MORTON PRINCE, Boston, Mass., has gone over the records of the Boston City Hopital cases of spinal cord injuries for some twenty years back, and has been attempting for some time to follow up all the cases after leaving the hospital, with a view to learning what the final result has been. Taking the cases that have occurred during a long period of time, and after having observed personally a large number of cases operated and not operated on, Dr. Prince has seen improvement without operation and improvement following operation, but he can not say that he has ever seen any improvement which he could logically and certainly attribute to the operation itself. Operations for traumatism of the cord are nowadays rarely recommended either by his neurological colleagues or by himself, unless there is some exceptional reason to justify this course. And yet the prognosis in severe cases, when there is reason to believe the lesion of the cord is complete, is so hopelessly bad, that he has felt that there is no particular objection to any surgeon trying the operation if he wishes to do so. Dr. Prince would not go as far as Dr. Spiller does in saying that it actually does harm, although the operation, in his opinion, is not nearly as harmless as it is sometimes said to be, but is attended by considerable danger, meaning immediate risk to life, particularly in the hands of surgeons who are not skilled in the technic.

DR. STERNE asked whether that also included the operations of choice for other injuries on the cord.

DR. PRINCE replied that he was speaking of fractures and dislocations causing structural injuries to the cord such as frequently come into the hospital.

DR. SPILLER remarked that he did not say that no case of fracture should be operated on, nor that operation is necessarily injurious, but that it may be injurious. In one case the evil effects of operation were clearly shown.

DR. ALFRED REGINALD ALLEN, Philadelphia, answering Dr. Sterne, said that, in the first place, there is no saying definitely that the cord is destroyed or that it is not. Even weeks or months will not answer that question in some cases. In others there is an absolute abolition of all the reflexes, and absolute abolition of all sensory and motor phenomena, from which one would be led to suppose that there is a complete lesion of the cord, and yet in the course of time the patient gets well, even without operation. There are a number of such cases on record. In a case referred to in the paper there was no point of exit of the bullet. The man was paralyzed, and Dr. Spiller diagnosed the level of the lesion. When the case came to autopsy the bullet was found imbedded in that particular vertebra. In passing it had not wounded the dura in the least, but had evidently just touched it. The cord for a distance of about 4 cm. was completely destroyed. Dr. Allen thought that in Dr. Sterne's case, instead of completely destroying the cord, the bullet did what frequently happens in fracture dislocations—it produced enough temporary injury to cause the paralysis and the other symptoms. Even some of the severest cases get well without operation. Like Dr. Spiller, he holds that these cases are better left alone surgically. In fact, judging from the hundreds of cases that he has gone over in the last eight months, he does not believe that we are justified in operating, except in a very few instances, until by experimental surgery on the lower animals we get some method of suturing the spinal cord. Dr. Thomas' case, he thought, was one in which, from his description of cervical dislocation, the upper or luxated vertebra had slipped forward, the inferior articular process locking in front of the superior articular process of the vertebra next below.

THE EPIDEMIC OCCURRENCE OF CANCER IN FISHERSVILLE, VA., AND VICINITY.*

A. L. TYNES, M.D.
Secretary of Augusta County Medical Society.
FISHERSVILLE, VA.

The principal facts of the histogenesis and structural peculiarities arising from different types of tissues have been pretty well worked out[1] and the workers in this field have allied themselves with the bacteriologist, chemist and biologist in their efforts to determine the etiology of malignant tumors, but so far they are unable even to determine whether cancer is of internal or external origin. There is much evidence in support of the theory that cancer is due to some micro-organism, and certain protozoa have been accredited with being the cause, but skepticism still prevails among the rank and file of the profession.

The experimental investigation of cancer in animals is, perhaps, the most recent and most promising field of research and the studies of Gaylord and Clows, and of Leo Loeb, in this country, have done much to stimulate interest along biologic lines. There is much yet to be

* Read before the Medical Society of Virginia, Nov. 13, 1907.

1. Observations on the Inoculability of Tumors, etc., International Clinics, vol. iii, Seventeenth series.

done; the field is a broad one, and until the facts are all in let us not waste time in hypothetical speculation.

As the general practitioner is the first one to come in contact with cancer he is in a position to observe the conditions under which it develops and the rapidity with which its pathological phenomena appear. He knows the family histories and the environments of his patients; the physical characteristics of the soil and food and other conditions which may affect the development and distribution of cancer. There are many side lights which he can throw into the field of research which might illuminate the work of the pathologist. A careful statistical study and analysis of his cancer cases by every physician in this state would not only enable us to arrive at a correct conclusion as to whether or not our cancer mortality is annually increasing, but would also reveal the localities where it is most prevalent. Then, with the cooperation of the laboratory expert, who could investigate the soil and water and food products, the actual cause of the disease might be discovered.

That there are localities where cancer in man and in the lower animals is unusually prevalent, is a fact well established. Prof. Loeb,[2] of the University of Pennsylvania, calls attention to an endemic occurrence of cancer of the inner angle of the eye among cattle on a ranch in Wyoming. So far as observed there were no conditions which differed from those at neighboring ranches that were practically free from cancer. L. Pic[3] reports a remarkable epidemic of cancer of the thyroid in trout in certain tanks in fish hatcheries in Germany. Even wild trout and fish of other families introduced to renew the stock developed the disease, while other hatcheries are entirely free from cancer. Pic, therefore, concludes that heredity, as an etiologic factor, may be eliminated and that this endemic occurrence of cancer in certain tanks in hatcheries is indisputable evidence of the existence of an infectious agent in the water of those tanks.

Perhaps the most remarkable endemic of cancer occurring in mammals and pointing directly to the cage as the source of infection is reported by Gaylord and Clowes.[4] I quote them briefly:

> A cage has been discovered in which over sixty spontaneous tumors among mice have occurred in the course of three years. The fact that the location of the cage was frequently changed and the stock entirely renewed, without any permanent interference with the production of tumors, makes it apparent that the cage itself was the source of infection.

Lyon[5] of Buffalo has made a careful study of the cancer areas of western rural New York and of the city of Buffalo. In the latter he has demonstrated that the disease is much more prevalent in the foreign born population, especially among the Germans, and that cancer of the stomach is ten times more common among the Germans than among an equal number of the native born. He concludes that this is due to the peculiar diet of the Germans, who eat much uncooked, and, therefore, infected food, and that this fact points toward a parasitic theory of infection.

As a farther substantiation of his theory of the parasitic cause of cancer, he gives a résumé of Behla's classical observations in the town of Luckau, in Prussia. I will summarize briefly in very nearly his own words:

> The town of Luckau consists of a central portion, with 3,000 inhabitants, flanked on the east by the suburb Kalau, and on the west by the suburb Sando, each with 1,000 population. During twenty-two and one-half years no case of cancer was noticed in the western suburb, Sando. Cases were not infrequent in the main town, and out of a total of 663 deaths from all causes, in Kalau, the eastern suburb, 73 were due to cancer. Cancer, therefore, caused one out of every nine deaths in Kalau, as against one out of twenty-five to thirty in the entire town; whereas there were no deaths from cancer in Sando. The soil in the main town and in Kalau was low and flat and moist; in Sando it was high and dry. The special distinction of the three divisions of the town was the location of a ditch, which derived its water from a stream below the suburb. Sando, without touching it, encircling the central town and the eastern suburb Kalau. Cancer followed this ditch, occurring chiefly in the main town among those whose gardens bordered on the ditch, and most frequently in the eastern suburb Kalau, all the gardens of which were watered from this ditch. Of 127 houses, the gardens of which backed on this ditch, 56 were cancer houses. The ditch contained stagnant water, and the people were in the habit of washing vegetables in water taken from this ditch. The vegetables were thus infected, and as they were eaten raw, they infected the people.

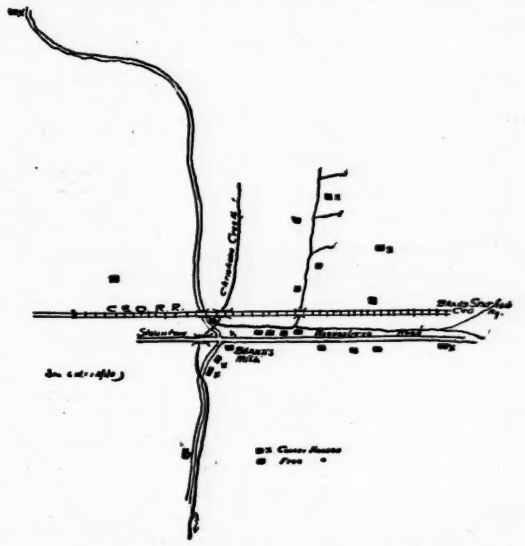


Fig. 1.—Map showing Brand's Mill neighborhood and relationship of houses in which cancer occurred. The top of the map is north.

Behla believed the peculiar and unequal distribution of cancer through the different parts of Luckau could be explained only by reference to the location of the ditch.

Believing that if such observations in men and in animals as I have detailed above were multiplied so that the law of chance could be eliminated it would be presumptive evidence of the infectious nature of cancer, I have determined to call the attention of this society to what I have termed "The Endemic Occurrence of Cancer in Fishersville and Vicinity." I shall quote a few lines from a paper I[6] contributed just a year ago to the Medical Society of Augusta County:

> The village of Fishersville is in the eastern portion of Augusta County. My work is largely confined to the area between Christian's Creek on the north and South River on the south, running up and down the valley for about nine miles,

2. Further Observations on the Endemic Occurrence of Cancer, etc., Univ. of Penn. Med. Bull., March-April, 1907.
3. Quoted by Gaylord and Clowes, footnote 4.
4. Evidences of Infected Cages as the Source of Spontaneous Cancer Developing Among Small Caged Animals, THE JOURNAL A. M. A., Jan. 5, 1907.
5. Fourth Annual Report N. Y. State Cancer Laboratory.
6. A Statistical Study of My Cancer Cases in the Fishersville District, Augusta Co., Va., Virginia Med. Semi-Monthly, Feb. 22, 1907.

and is of a distinctly rural character. These streams are approximately parallel. The country is hilly, providing good natural drainage, and is partly wooded, while the soil, for the most part, is exceedingly productive. Near South River is a stretch of sandy soil; next comes a belt of limestone, and next to Christian's Creek slate abounds.

This section is traversed by two railroads and numerous public highways, making it easy of communication. There has been a steady infusion of new blood from Maryland and Pennsylvania for over seventy years. The people generally are devoted to agriculture and stock raising, and are unusually prosperous and well-informed.

These facts, together with the great variety of family names, are adduced in support of the idea that there has been no unusual degree of consanguinity, a probable factor in the etiology of cancer. A list of hundreds of confinements attended during the nine years under consideration also convinces me that the

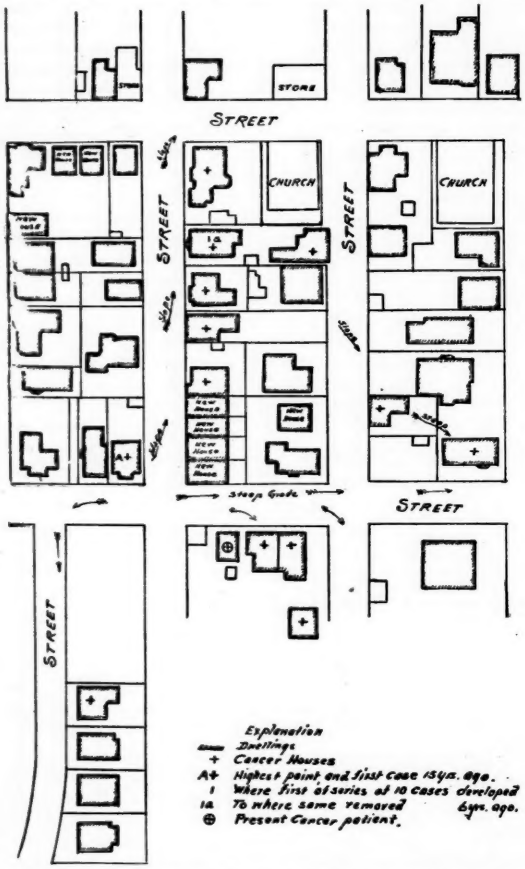


Fig. 2.—Map showing relationship of houses in which cancer existed. The top of the map is north. Scale, 100 feet to 1 inch.

birth rate has been well looked after in the Fishersville community, and, therefore, race suicide and senility are not unusual conditions to be reckoned with.

My practice embraces an average of about 265 families, or some 1,300 people. There are other families living within the limits of my work, but this report, be it understood, is confined to the families among whom I practice, and does not include cases of cancer and other diseases seen in consultation, or deaths due to cancer or other diseases outside the limits of my own work.

From October 15, 1898, to October 15, 1907, a period of nine years, there have occurred in my practice, not including still-born infants, 105 deaths from all causes; 16, or 15 per cent., were due to pneumonia; 17, or 16½ per cent., to tuberculosis, and 18, or 17 per cent., to cancer.

In order that we may appreciate this unusually high mortality from cancer, let us compare it with the township of Brookfield, N. Y., perhaps the most widely known cancer zone in this country. With a population two and one-half times as great as the Fishersville district there were in the fifteen year period, 1886 to 1900, 1,719 deaths from all causes. Of these 70, or 9.7 per cent., were caused by cancer; whereas the Fishersville mortality from cancer during nine years is 18, or 17 per cent., out of a total mortality of 105. The rate in the Fishersville area is, therefore, nearly 8 per cent. higher than in the Brookfield area.

As shown in that report, heredity and consanguinity in my cases were not important factors, there being only one case of direct descent from a cancerous ancestor, and that a great-grandmother. One patient had an aunt, one a cousin and one a sister who died of cancer. Diligent inquiry has been made of all the regular physicians adjoining me and I find no such death rate from cancer approaching that of my own experience. In fact, if I eliminate the city of Staunton, I have had more deaths from cancer during the last nine years than have the six physicians surrounding me combined, and this includes the town of Waynesboro, with a population of 1,400.

Now, let us study my cases more closely and see if we are warranted in assuming a probable infectious origin as the cause of this unusual mortality from cancer. Two years ago Mrs. F. died of cancer of the uterus. Shortly after her death, Mrs. M. occupied this brick house, and within two years she was dead of cancer of the liver. Mrs. A. died of cancer of the pancreas. She was very friendly with her cousin, Mrs. L., who died of cancer of the uterus. At Ladd's Post Office, seven years ago, X died of cancer of the rectum. Diagonally across the road Mrs. S. has just died of cancer of the stomach and bowels. Three years ago V. moved from one-half mile of this house to Waynesboro and he has just died of cancer of the liver, after an illness of eighteen months. Seven years ago, near this same house, N. died of cancer of the throat, and shortly before Mrs. D. of cancer of the uterus. They were all friends and lived within a radius of a mile. One and one-half miles north of Ladd's Miss E. died of cancer of the liver metastatic from cancer of the breast, which had been removed one year before. Five years afterward her sister, who had lived for years in the same house and nursed her, developed cancer of the pancreas, and has just died, making my third pancreatic case, the diagnosis in every case being confirmed by operation or autopsies. One and one-half miles north of this house, in the village of Fishersville, Mrs. R. and Miss R. (not related) died of cancer of the face and rectum, respectively. They lived diagonally across the road from each other. A few months ago, Mrs. S., who lived forty feet away from Miss R., died rather suddenly. She had a large abdominal tumor and was in ill health, suffering at times with violent abdominal pain, but a positive diagnosis was not made and she is not included in this report. Exactly opposite Mrs. R.'s house, across the road, Mrs. H. died of a bowel affection which was highly suspicious of cancer and is referred to in my former studies, but was not included in my eighteen cases.

I have in my possession the names of a number of people who died from cancer, within a radius of one and one-half miles of Fishersville, about twenty-five or thirty

years ago. In fact, I have been appalled at the high mortality from this disease about that time. There seems to have been a check in the ravages of cancer for nearly two decades, only to break out with relentless fury during the one that is now under observation. This characteristic is analogous to that of certain infectious diseases, and, to my mind, is strongly presumptive evidence of the infectious nature of cancer.

But to continue. At Brand's Mill,[7] three miles from Fishersville, within a radius of one mile, I have lost four patients from cancer, three of whom died within a period of six months. There is one case of cancer there at present, and another woman has a large pelvic tumor. Except these cases I recall only two deaths from other diseases in this community during the past five years.

On or near a certain section of road, one and one-half miles in extent, near Fishersville, are four brick houses. In one I have seen two cases of cancer. In each of two others there has been a case and possibly a fifth case in the other one of the four brick houses. On Barren Ridge, one and one-half miles from Fishersville, I lost a patient with cancer of the uterus and a few hundred yards away a patient with cancer of the bowels. This patient lived in the house whose former occupant, Col. X., died some twenty years ago from cancer of the face. While living in this same immediate community, but in a brick house, and before he was afflicted, Col. X.'s daughter died of cancer of the breast, and her cousin, who made her home with them and nursed them, has since died of cancer of the stomach. It is very interesting to note that this old man's mother also died of cancer of the face, and that his next door neighbor, one-eighth of a mile away, developed cancer. This daughter is the granddaughter of Col. A., who lived one mile away and died some twenty-five or more years ago. These people were then and are now among the most prominent citizens of our county and they have furnished me with these statistics:

A. immigrated to Fishersville from Scotland, and nothing is known of his health or that of his antecedents. He himself was accidentally killed. At least four of his children died of cancer of the face: Col. A., aged 76; Mrs. B., aged 75; Mrs. C., aged 70; and Mrs. D., aged 60. Col. A., by his first wife, had four children. Daughter No. 1 died of cancer of the uterus, aged 30; Nos. 2, aged 29, and 3, aged 34, of tuberculosis, but her daughter died of cancer of the breast, aged 28, and is the one to whom I referred above. The poisoned son left one son, who has just died, possibly of cancer. Col. A.'s sister, B., died of cancer of the face, and her son of cancer of the liver. His sister, C., died of cancer of the face, and she lost a daughter, Mrs. H., from cancer of the uterus, and this daughter, in turn, lost a daughter from cancer of the uterus. Col. A.'s sister, D., died of cancer of the face. His sister, E., did not die of cancer, but her son died of cancer of the face.

Here was a family in which were eleven cases of cancer. It may be called hereditarv transmission, but how would this explain the number of sporadic cases I have referred to, but have not named individually, existing here in this immediate community, at about the same time, and who were intimately associated as neighbors and servants, but were not related? Then, too, permit me to say that I am the family physician of the descendants of this family in this section and though I have had eighteen cases of cancer here I have not seen even a suspicious sore among any of the members of this family now living in this community.

I now wish to report a focus of cancer more distant from me, occurring about the same time and closely connected by blood and association with many of the people among whom I practice. Col. L. died of cancer of the face; his brother, C., of cancer of the ear; his sister, E., of cancer of the axilla; Col. L. had three children. J. and W. died of cancer of the face and the daughter of cancer of the uterus. J. L.'s daughter died of cancer of the uterus. Col. L. was the first member of the family attacked. All lived within sight of one another and nursed each other until death.

Another observation which I regard as furnishing the strongest evidence of the infectious nature of cancer is the following: I am not at liberty to divulge either the name of the locality or the names of the physician and the layman who kindly furnished the facts. Suffice it to say that, in a nearby city, within the last six years, there have been ten deaths from malignant tumors, in a sharply defined area not much larger than a city block, and there is one case there at present. In fact, five of the cases occurred in the same block, on the same street, and in the five adjoining houses, and the others on adjacent property. The first patient, making eleven persons in all who have died, developed cancer at the highest elevation in the locality less than one block away, fifteen years before any of the above cases developed. The drainage from her house is directly down the street and into the premises of the other five houses where cancer later developed. Two hundred feet southwest from one of these houses was a case of epithelioma of the face, but the old man was accidentally killed about two years ago. This makes twelve cases developing in this section in about six years.

Only three of these persons are related, and they were sisters and a son. So far as I am informed, there is no history of heredity in any of these cases.

SUMMARY.

There has been an endemic of cancer in Fishersville and vicinity for a number of years. At one time there was a high mortality from cancer among those who lived in the community, by no means confined to families, succeeded by a period in which there was comparative immunity to the disease. This period is followed by a decade in which there is a recurrence of the disease, causing a higher mortality in my own practice than that of any other disease.

In a nearby city, within an area a little larger than a city block, twelve cases have developed during the last seven years, and this in a city in which the physicians inform me they have seen very few cases of cancer.

In conclusion, permit me to say I believe sufficient evidence has been submitted to show that the high mortality from cancer in Fishersville and vicinity is not due to a fortuitous occurrence, but I believe it is due to an infectious organism transmitted directly or by means of a host. Such a theory does no violence to the views of those who believe in a hereditary predisposition to cancer.

7. Since writing the above, further inquiry reveals the fact that some forty odd years ago this family, consisting of a mother, grandmother and thirteen children, occupied the house in which the present and last surviving male member now lives and is affected with cancer of the face. The grandmother died here of cancer of the face; the mother of a "bad womb trouble;" a brother died at an advanced age of "thigh bone disease," which was believed to be cancer. After leaving the old home, another brother died of cancer of the mouth; another at an old age of "abscess of the liver," and a nephew of cancer of the throat. Nearby, and about the time the grandmother died of cancer, an old negro woman died in a brick house, one hundred yards above the house at Brand's Mill in which I recently lost a case from cancer.

To Take Castor Oil without Disgust.—Cracked ice held in the mouth before taking castor oil chills the tongue and prevents any disagreeable after-taste.—*Nurses' Jour. of Pac. Coast.*

"CACTIN" AND "CACTINA;" AN EXAMINATION INTO THEIR PHYSIOLOGIC ACTION.*

S. A. MATTHEWS,
CHICAGO.

Not long since R. A. Hatcher[1] made a physiologic examination of a number of preparations of *Cactus grandiflorus* which certain enterprising pharmaceutic manufacturing companies were exploiting as possessing invaluable therapeutic properties. He evidently went thoroughly into the somewhat limited literature on the subject, and one only needs to refer to his article to find out the present status of our knowledge of the chemistry and the physiologic action of the yet unknown principles contained in *Cactus grandiflorus*.

As stated by Hatcher, various principles derived from the different members of the cactus family have been

Fig. 1.—Cactin experiment. Dog, wt. 8 kg., time 10 a. m. Read from left to right: Upper tracing, blood pressure; lower, respiration. Normal blood pressure, 100 mm. Hg. At point indicated in tracing, 25 cactin granules, dissolved in physiologic salt solution, were injected into the right saphenous vein (time 10:01). Blood pressure dropped to 96 mm. Hg, but soon rose again to normal, 100 mm. No change in rate.

Fig. 2.—Ten minutes later (10:10), 25 cactin granules were injected. Blood pressure, 98 mm. Hg. No change in rate.

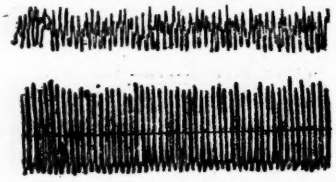


Fig. 3.—Ten minutes later (10:20), blood pressure 90 mm. Hg. No change in rate.

subjected to physiologic examination, but few and incomplete are the researches on the physiologic action of anything found in *Cactus grandiflorus*. This is probably due to the fact that no one has been able, thus far, to isolate any substance which could be said, with any degree of certainty, to be either an alkaloid or glucosid contained in this member of the cactin family and possessing physiologic action.

Hatcher has left it unnecessary for me to go into the history and literature of the subject, hence my only reason for investigating these preparations of cactus at this time is that they are still being advertised as very useful remedial agents; therefore, a restatement of the place assigned to them by physiologic experiment will not seem out of place.

* From the Laboratory of Experimental Therapeutics, University of Chicago.

1. THE JOURNAL, Sept. 21, 1907, p. 1021.

The substances used in this investigation were the so-called "Cactin," prepared from *Cactus grandiflorus* by the Abbott Alkaloidal Company of Chicago, and "Cactina," manufactured by the Sultan Drug Company of St. Louis. Both preparations were purchased in the open market; cactin in the form of granules, each granule said to contain 1/67 grain cactin or approximately 1 mg.; cactina in the form of pellets, each said to contain 1/100 grain of "cactina."

CACTIN (ABBOTT).

In the literature sent out by the promoters of this preparation special attention is called to this granule, "it being an invaluable steadier of the circulation." In view of the fact that no one heretofore has been able to find anything in *Cactus grandiflorus* possessing any

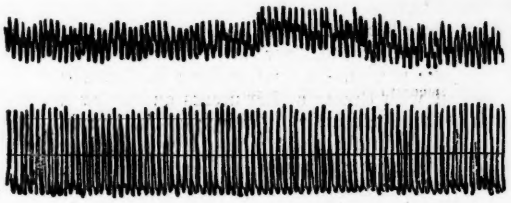


Fig. 4.—Ten minutes later (10:30), blood pressure 98 mm. Hg; 25 cactin granules injected.

Fig. 5.—Ten minutes later (10:40), blood pressure 98 mm. Hg; no change in rate.

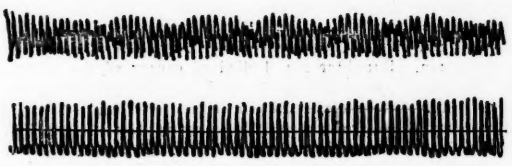


Fig. 6.—One hour and twenty minutes later (12:00 m.) and after the administration of 7,200 cactin granules, blood pressure 98 mm. Hg; no change in rate.

physiologic action whatsoever, the company's claims as to the most extraordinary influence of this preparation on the heart and circulatory organs in general, in any and all deranged conditions of the circulation, are most interesting, indeed, and, if true, most valuable.

That cactin (Abbott) is non-poisonous is attested to by the fact that guinea-pigs will withstand 30 to 50 cactin granules administered per os or subcutaneously without the least effect. Also rabbits, in like manner, will withstand 50 to 100 granules. This simply means that a man could take any quantity. I took 100 of these cactin granules, 25 at a dose, every four hours, without experiencing the least effect. Being satisfied that cactin possessed none of the properties of an acute poison, I made a few experiments on dogs to see what influence it might exert on the circulation, using the methods generally followed in physiologic experiments.

EXPERIMENT 1.—Dog, weight 8 kg. Anesthetic, ether. Prepared in the usual manner to take a blood-pressure tracing and a record of the respiratory movements. Two hundred cactin granules were ground to a fine powder in a mortar and dissolved in 80 c.c. of physiologic salt solution. This was administered intravenously in doses of 10 c.c., or about 25 granules at a dose.

At the beginning of the experiment (10 a. m.) the blood pressure was 100 mm. Hg. Two hours later (12 m.) and after the administration of 200 cactin granules the blood pressure was 98 mm. Hg. The blood pressure and the rate of both heart and respiration remained practically constant throughout the experiment (Figs. 1-6).

This shows the record of one of several experiments performed under like conditions, all of which showed

Fig. 7.—Cactina experiment. Jan. 13, 1908. Dog, weight 12 kg.; time 10:30 a. m. Read from left to right: Upper tracing, blood pressure; lower, respiration. Normal blood pressure, 134 mm. Hg.

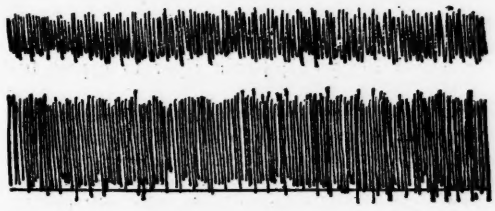


Fig. 8.—Ten minutes later (10:40), ten cactin pellets were injected at point indicated on tracing. Blood pressure one minute after injection, 128 mm. Hg.

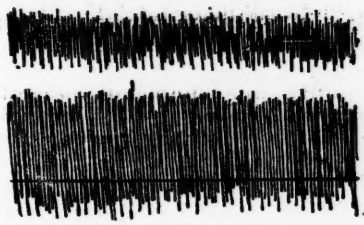


Fig. 9.—Twenty minutes later, 11:00 a. m., blood pressure 120 mm. Hg. Second dose of ten cactin pellets were administered at 10:00.

cactin to be inert, just as inert as milk sugar administered in like quantity. One of the dogs used for experiment was suffering from the effects of a large goiter, and had a very irregular heart and low blood pressure. In fact, it was difficult to keep the animal under the anesthetic (ether) with any degree of safety. In this case cactin was without the least effect, in doses of 5 granules every ten minutes for one hour. In this case the corresponding dose for man (dog 8 kg., man 70 kg.) would be about 40 to 45 granules.

It would seem from the results here recorded, and from certain clinical reports sent out by the manufacturers of cactin, that physiologic experiments and so-called clinical observation must part company.

CACTINA (SULTAN).

This preparation is on the market in the form of pellets and is claimed to be the proximate principle of *Cactus grandiflorus*.[1]

This preparation of cactin was found to differ somewhat from the cactin of the Abbott Alkaloidal Company in that it was found to be poisonous in large doses, administered intravenously. A single dose of five, ten or even twenty cactina pellets, administered intravenously, to a 10-12 k.g dog exerts little or no influence on the heart or circulation; the larger dose may cause a slight fall in blood pressure (Fig. 12). The following experiment will show the action of cactin on the blood pressure of a dog, administered in doses of ten pellets:

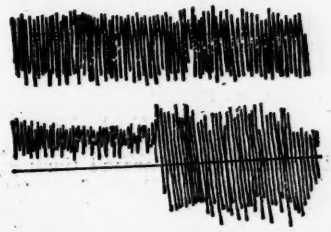


Fig. 10.—One hour later (12:00 m.), doses of 10 cactin pellets had been administered at 11:05, 11:15, 11:30 and 11:40, making a total of 60 cactin pellets. Variation in respiration tracing due to a shift of the ether bottle. Blood pressure, 120 mm. Hg.

Fig. 11.—Forty minutes later (12:40), ten cactin pellets were injected at 12:10 and at 12:20, making a total of 80 pellets. Blood pressure, 40 mm. Hg. Respiration slowed. Dog died at 12:50.

Fig. 12.—Blood pressure and respiratory tracing taken from 10 kg. dog. Two doses of 20 cactin pellets each had been administered intravenously 20 minutes apart. Tracing was taken 20 minutes after last dose. Normal blood pressure, 140 mm. Hg. Blood pressure indicated in tracing 120 mm. Hg. Respiration slowed.

EXPERIMENT 2.—Dog. Weight, 12 kg. Anesthetic, ether. Experiment conducted under same conditions as Experiment 1. One hundred cactin pellets were dissolved in 100 c.c. of physiologic salt solution. This was administered intravenously in doses of 10 c.c., or 10 pellets. Corresponding dose for man (dog, 12 kg., m. cm. 70 kg.) would be about 60 pellets at a dose (Figs. 6-12).

All this experiment showed was a gradual decline in blood pressure, and if 70 or more pellets were administered in the space of two and a half hours, the animal generally died, the blood pressure gradually going to

1. Myers: N. Y. Med. Jour., lili, 681.

zero and the respiration growing progressively slower and weaker. In fact, instead of showing any stimulating effect on the heart, it showed the opposite—both the circulation and respiration were progressively weakened. In this regard it differs from strychnin, and has no resemblance to the action of digitalis, strophanthus or any other of the known heart stimulants. Just what is in this preparation that causes a depression of the circulation I do not know. Figure 12 shows the effect exerted by 40 cactina pellets, twenty minutes after the last dose, or forty minutes after the first (20 pellets at a dose). This animal was used for another experiment and was living two hours after the administration of the cactina.

Here again it might be said in regard to cactina, as has been said of cactin, physiologic experiment is wholly out of harmony with the clinical results published by the Sultan Drug Company. In the light of my experiments all that can be said for either one or the other of these preparations (cactin [Abbott] cactina [Sultan Drug Co.]) is: Physiologically neither one corresponds in the slightest degree to the claims made by their respective exploiters, the former being absolutely inert in doses at least a thousand times greater than recommended, the latter in large doses (two or three hundred times the dose recommended) shows a depression of the circulation and respiration.

The negative results recorded in this paper simply confirmed all previous pharmacologic work on *Cactus grandiflorus;* that is, no one has ever found it to possess any physiologic action whatsoever.

A BREACH OF TRUST; THE PHYSICIAN'S USE OF SECRET REMEDIES.*

JOHN B. ROBERTS, M.D.
PHILADELPHIA.

The trust and confidence in physicians shown by the public is phenomenal. A woman will bring her baby to a doctor, whom she may never have seen before, and permit him to prescribe for it, knowing that on his judgment, knowledge and care depends its very life. Men and women of the highest culture and intellectual power will place their lives, aye, their honor, dearer than life, in the custody of an anesthetist and an operator of whom they know little. Can a higher compliment be paid to a profession than this? It must be remembered that it is the knowledge that we are physicians which gives rise to this unusual faith in our integrity, our wisdom, our skill. None but the thoughtless doctor can fail to be thrilled when he realizes to what a pinnacle of virtue the repute of his calling has raised him. Perhaps it is the familiarity of this attitude of the public which makes us a little dull in appreciating the responsibility which its docile trust imposes. It at least must drive an honest man to a soul-stirring endeavor to play fair with his patients.

While it is true that some essayists and novelists have occasionally written disparagingly of medical men, it has, as a rule, been their foibles that have been smiled or railed at rather than their altruism for their patients. The words of thoughtful observers will seldom fail to confirm what I have said as to the prevalent opinion concerning physicians. It, therefore, behooves the present generation of doctors to maintain the honor of medicine by justifying this trust in its votaries.

Recent events in commercial and political life have exposed astonishing breaches of trust in high stations. Lapses from the kind of integrity supposed to be general have shaken faith in insurance circles, in the transportation business and in financial enterprises. The result has been economic distress and almost universal distrust.

The primal duty of one who offers himself as a healer of the sick and injured is to know what he is doing. He needs to use his mind to discover the cause of the illness and to apply his knowledge to furnishing the means of relief. Hence, he must see to it that neither ignorance of medical progress, nor a mind befuddled with drugs, nor the secret composition of his remedies makes him unfit to be trusted with human life. Such deficiencies on his part rob his clients of what they have a right to expect and lessen the honor in which the profession of medicine has long been held. A man who puts an unknown dose of an unknown poison into the circulation of his trusting patient is worse than a quack. He commits a breach of trust, as surely as the financier who fills his own pockets by selling worthless securities, or the guardian who cheats his ward out of his patrimony.

For a number of years the public respect for the medical profession has been in danger; because some credence has been given to rumors of secret division of fees, acceptance of bribes and other breaches of trust such as that under discussion. My observation has proved that such practices are indulged in by those from whom the public has a right to expect better things

Sensational newspapers have disseminated the notion that physicians are willing to kill the sick deliberately, for whom they have no cure. A recent novel by a woman of great ability seems to indicate that she believes that a trained nurse, who is sane, will murder a desperately ill patient entrusted to her care. The insult to physicians and trained nurses conveyed in these publications is a result of some of our own misdoings. The damage done to public confidence in these essentials of modern civilization by such opinions is, perhaps, as widespread as the loss of financial stability due to recent knavery in business.

The cure for the nostrum evil is the inculcation by medical teachers of the maxims of Hippocrates and their own discontinuance of prescribing secret preparations, the use of the Pharmacopeia as a text-book in medical schools, the immediate emptying of samples of secret nostrums into the sewers, a better education in therapeutics, and an insistence that the prescriber of secret nostrums is a dangerous quack, who commits an actual breach of trust.

* Read Dec. 3, 1907, before the Philadelphia Branch of the American Pharmaceutical Society

Paraplegia Following Roentgen Treatment of Cancer.—Martini's two patients had each a cancer in the chest wall and it retrogressed notably under the influence of Roentgen treatment. As the tumor subsided signs of paraplegia became apparent and the patients succumbed from thirty to forty-four days after the onset of the paraplegia. It came on suddenly, preceded by a severe radiodermatitis, and the circumstances seem to exclude a possible direct action of the rays on the spinal cord. Nothing was found at autopsy to indicate a metastatic affection of the spinal cord nor lesions of the vessels suggesting syphilitic infection, but merely a softening, a degeneration, of the nerve substance. Consequently he is inclined to ascribe the paraplegia to a myelitis of toxic origin. His article was published in the two last numbers of the surgical section of the *Policlinico* for 1907.

Special Article

MY "ATTACK" ON DOCTORS.

EDWARD BOK.
Editor of *The Ladies' Home Journal.*
PHILADELPHIA.

I.

Because I said at a meeting of the Philadelphia Branch of the American Pharmaceutical Association that a large number of physicians prescribed "nostrums," I have been accused, in print and in scores of letters, of making an "attack" on the medical profession. One would imagine from some of the expressions used that the medical profession is an institution of the holy of holies, quite without human fault or flaw, and that when we laymen seek to approach it it should only be in a deferential and worshipful attitude, bringing our prayer-rugs with us.

Of course, my "attack" was not an "attack" at all. I never planned an "attack;" I did not make one. What happened was simply this: The meeting was called to discuss the relation of the physician to the nostrum; I was asked to take part, and I contended that the physician should have no relation to the nostrum at all, but that he nevertheless had, that physicians of eminence and unquestioned reputation were constantly prescribing proprietary remedies of which they did not know the composition, and that this practice was wrong, closely verging on the criminal.

In common with others, the editor of THE JOURNAL of the American Medical Association said in an editorial that I had been led into "exaggeration;" that some eminent physicians might have "occasional lapses" (God save the mark!), but that these were few in number; that they were decreasing any way, and that, after all, the public often confused an "eminent" physician with one who is only "well known." And when I objected to his contentions, he placed the pages of his paper at my disposal, of which invitation this article is the acceptance.

I did not exaggerate when I said that a large number of the most eminent physicians in the profession prescribed nostrums of which they did not known the ingredients. And in order that we may not split straws over adjectives, I will substitute "leaders" for "eminent" and "well known," and with that perhaps clearer definition I repeat my assertion. I know exactly whereof I speak. Instead of "exaggerating," I was conservative; more conservative, in truth, than my facts warrant.

I am willing to believe, and some recent figures I am now gathering would seem to bear out this statement, that the pernicious practice among physicians of prescribing preparations of unknown composition is on the decrease. In 1905, in Philadelphia, on a basis of 5,000 prescriptions examined, I found 41 per cent. that called for remedies of unknown composition, and in 1906 it was 47 per cent. My figures for 1907 are not as yet complete. But I do know that, as late as August, 1907, 500 prescriptions were examined in Baltimore, and 32 per cent. called for proprietaries. But the question that concerns the public is not whether it is 47 per cent. or 32 per cent. or 10 per cent.

The real point is: What business has the physician to prescribe these nostrums at all?

It is not meeting the question squarely to contend that physicians are human; that they are men after all, and that they have been misled into placing too great trust in the printed assertions of the manufacturers of these preparations; in other words, that they have been fooled by advertisements. To me, this is nothing short of a cowardly dodging of the issue. The physician is human. I need not be told that, Heaven knows. His prescriptions that lie before me bear out that assertion plainly enough. I do not place the physician as above the ordinary human being, except in one respect, and there he does stand alone. Men in all other professions may make mistakes, and, generally speaking, those mistakes hurt only themselves. But in the case of the physician, the tragedy is that his mistakes do harm to others. Therefore, his exercise of care should be greater because his responsibility to others is greater. He takes human lives into his hands, and when these human beings, with their bodies ill and aching, come to him, it is no part of his profession to put into that body a preparation of which he does not, either of his own personal knowledge or experiment or from authoritative information, know the exact ingredients. No excuse excuses him here. We laymen have a right to expect that what a physician does for us he does of his own knowledge and not after the knowledge of a printed formula, often written by a man who never graduated from a medical school. We go to him for *his* advice, for *his* prescription, but not for one originated by a Wampole, a Parke Davis, a Fairchild, a Mulford, a Wyeth or any other commercial firm. He should write his own prescriptions. But so far has the average physician departed from his own individual prescriptions that, if you refuse him the right to prescribe somebody's proprietary mixture, he is immediately ready to argue with you that you are depriving him of a perfectly legitimate form of prescription, and from the way he throws his hands up to Heaven, you might imagine that he was left no alternative. He will differ with you as to what constitutes a physician's knowledge, and will claim that he has a perfect right to depend on the truthfulness of So-and-So's label. In fact, several physicians, leaders of the profession, have seriously told me that they are compelled to rely on these statements.

It is just this state of mind that the practice of prescribing ready-made remedies has brought about. It has been of such insidious growth; the manufacturers have so cleverly played their cards that the practice has grown into a positive habit. Until what? Until now we actually see printed prescriptions calling for sometimes a secretive, then a non-secretive, but always a ready-made preparation just the same—both as regards ingredients and quantities, mind you—and the only personal touch of the physician on the prescription is his autograph at the bottom, and that for the most part illegible! This is the point which has been reached; the limit, to which this practice of prescribing ready-made preparations—call them nostrums, non-secretives, proprietaries, ethicals, whatever you like—has been carried. It makes only a difference in the degree of seriousness because these printed prescriptions call, for the most part, for tonic preparations. That is, they do as *yet*. The manufacturers can be depended on to see to it that these printed prescriptions will soon be used for more serious illnesses, and, judging from the past and present, the physicians may be trusted to adopt them.

Now, I ask in all fairness, How long does the medical profession imagine that the public is going to stand for this cut-and-dried, stereotyped method of prescribing whereby the patient is fitted to the medicine instead of the medicine fitted to the patient? And yet, a number of reputable physicians have sought to argue this method with me when I criticized it, as if the principle involved could be condoned on any ground.

Surely, we are in a fair way of seeing the science of medicine degenerate into the black art, whence it began, if such methods are not only practiced but ostensibly approved by physicians of standing!

II.

A question that has come to me scores of times, consequent on my Philadelphia address, is: "Do we entirely agree on the question: What is a nostrum? Do you clearly differentiate between a 'nostrum' and a 'non-secretive'?" In other words, do I know what a nostrum is? Perhaps I do, and perhaps I do not. The question is immaterial, as applied to me. Personally, I think I know what a "nostrum" is; I certainly should. But the graver question that concerns the public is: Does the physician know a nostrum? There has been altogether too much hair-splitting over a proper definition of the word "nostrum;" and whether the particular preparation is a "nostrum" or whether it is a "non-secretive," and the whole discussion is as useless as it is evasive of the real point at issue.

There is a very single and simple definition of the word

"nostrum" in its relation to physicians, and it is a definition that is accepted by the public, for the simple reason that the public believes that this is the present definition of the word by the average physician, whereas every intelligent physician knows that it is not. The definition is this:

Any preparation of which any physician does not know all the ingredients should be to him a nostrum. It makes not a particle of difference whether it is called or adjudged a "nostrum," or an "ethical," or a "non-secret." If he does not know the ingredients contained in that preparation, it is unknown to *him;* it is a secret to *him*, and, as such, it is a nostrum to *him*, and the lack of knowledge should prevent him from prescribing that preparation until he does find out, by personal analysis, by personal investigation, or by authoritative information through channels that are open to every physician, exactly what is in the medicine. In other words, a physician ought to know what is in a medicine that he prescribes; if not, he is prescribing a "nostrum" because to him it is an unknown preparation. There can be no compromise here; no middle ground regarding the only attitude that is at all scientific and honorable; either a physician knows, or he does not know.

When that simple and honorable standard of prescription among physicians shall prevail, it will no longer be possible for a physician of unquestioned standing to write to me and say that he prescribes "non-secretives" but not "nostrums;" and then, when I look up his prescriptions, to find he has called for such preparations as Thermol, Bromidia, Nutritive Elixir, Phenalgin, and the like!

The trouble in this whole discussion, so far as the relation of the nostrum to the physician is concerned, is that too much time has been taken up with an attempt at proper classification of preparations, and not enough emphasis placed on the physician's individual conscience. There is only one question that the physician should settle: "Do I know what I am prescribing?" If he does know, he is within his rights as an honorable practitioner; if he does not know, he is not. This whole discussion has centered too much on the drug, whereas it should be centered on the man; his conscience; his knowledge.

But this knowledge the average physician has not. And I have not the slightest hesitation in including in this statement the great majority of physicians. Medical ethics have, indeed, reached a low ebb when pharmacists find it necessary to inaugurate such a movement as was recently set on foot in New York City to check the sale of nostrums by dissuading the physicians from prescribing them, and to insist on a recognition of the U. S. Pharmacopeia as the standard of meritorious drugs. "Why come to me and ask me to stop selling these 'patent medicines'?" said a druggist to me recently. "Stop the physicians from prescribing them and then we won't have to carry them. Look at this sort of prescription," and he handed me six prescriptions calling for Radam's Microbe Killer, Phenol Sodique, Beefine, Bromo-Quinin, "and here," he concluded, "is a prescription for a particular brand of so-called tasteless 'Cod Liver Oil,' that every druggist knows is a pure fraud, which I do not even carry, yet I have to go out and get it, to fill this prescription, or else be charged with substitution, or with meddling with the physician's prerogative."

III.

Now, what is the public attitude to what has been going on in this question of physicians prescribing preparations of which they do not know the ingredients? For the public has its knowledge and is rapidly shaping a definite attitude.

During the past five years I have been in a position peculiarly favorable for securing a fairly accurate idea of the attitude of a large part of the great lay public to the medical profession. Hundreds, yes, thousands of letters have come to me, and in all of them there has been shown a tendency to question the methods of the average practitioner. This has been particularly true of the last two years, and I have seen this tendency steadily grow from a mental attitude of questioning to a distinct and definite feeling, first, of disquietude, then unrest, and, finally, of distrust of medical methods. With the public mind disturbed and upset on self-medication, it has turned with a peculiar analytical attitude toward the profession that has been instilling into it for years the great danger of taking medicines of unknown composition. And what has a part of this public found? This same profession practicing exactly the very evil which it has so unstintingly denounced as injurious and pernicious!

Now, one important fact must not be lost sight of in the attitude of the lay-public to the physician. The time was when the layman approached the "medicine-man" with awe; with an obeisance that acknowledged in him a superiority as a man possessed of some mysterious, occult power of healing. But that day is over; that time has gone by. Your layman of to-day is more intelligent; he is doing more of his own thinking; no one man possesses any magic power in his mind any more. The position of the physician in his relation to the layman has not only changed, but is changing and will change even more in the future. He is no longer, in the layman's eyes, the court of last resort on human health. To the layman have, here and there, come drippings of little leaks in the physician's knowledge, and latterly there have come to him a number of these drippings in the form of instances that the physician, in a number of cases, does not always know what he is prescribing. And he repeated these instances to others, and they, in turn, to others, and from a state of wonderment he began to ask, and, finally, he picked up his pen and wrote to those who he thought would tell him frankly, and asked, "Is this true? We are putting the lives of our loved ones into the hands of these men, and we want to know." And then later still the questions changed in tenor and they said, "We have a right to know." And, pray, what was the honest answer to give?

I ask every intelligent physician this question: Suppose the present tendency to investigation should turn itself on the medical profession and its methods? What kind of revelations would come to the public? What would the public think of the scores and hundreds of instances of densely ignorant, unintelligent and criminally careless prescription writing of which the physicians of to-day have been guilty?

Fancy a physician of undoubted standing holding forth, to my utter amazement, before a clinic only a few weeks ago, on the efficacy of a certain preparation which a special report of the Council of Pharmacy and Chemistry, published in this journal, showed had been investigated and decreed as being "perfectly worthless," and then expressing surprise when I brought him the publication! What in the world can we expect of our younger physicians if men whom the young look up to, and have a right to look up to, advise them of a preparation of the ingredients of which they are absolutely ignorant?

The whole matter resolves itself into this: There must come, and come soon, a distinct and sweeping reform from within the medical profession as to the present unintelligent method of prescribing. That there is prevalent to-day among physicians of all ranks a degeneration in scientific prescribing, of the true science of therapeutics, is not a question for argument. It exists and widely so. It is useless to deny it. It is a waste of time for one class of physicians to accuse another and to absolve themselves. It is a significant fact that, while scores of letters of denials of this practice have come to me from physicians, I have still to receive the first denial of the practice from a pharmacist; on the contrary, I have received scores of letters from pharmacists endorsing my statements. Besides all that, I have seen too many prescriptions myself; I have too many in my possession either to differentiate one class of physicians from another, or to have the slightest fear of a successful challenge of my statements. The ground under my feet is too secure for me to have the slightest hesitation in saying, firmly and positively, that, excepting a very small minority of conscientious and honorable physicians, the average practitioner of to-day has become a dependent on ready-made, hand-me-down preparations which he is prescribing to his patients without an accurate, personal knowledge of what he is prescribing. This statement admits of no doubt; I know it,

and I know further that it must stop, or a public awakening is imminent which will cause an unrest and distrust on the part of the public that it will take years to restore, if it is ever restored. And the signs are everywhere on the horizon that this public awakening is already in a smouldering state, waiting only for the torch that will light it into flame. The increasing readiness of the intelligent public not only to listen to but to adopt any new pathy or science, in which the element of drugs is omitted, spells not the ignorance or the gullibility of the public, as some physicians are ever ready and fond of designating any departure from the established school, but it spells in very plain letters, with the handwriting distinctly visible on the wall, a growing feeling of unrest and of distrust of the methods of the average physician, and a proclamation of individual enlightenment on this whole question.

The physician of to-day, by reason of his own acts, and chiefly by reason of his blind acceptance of commercial statements, rather than his reliance on his own personal knowledge of the drugs that he is prescribing, is rapidly losing his individuality. The time has come, yea, it is imminently at hand, for him to reconstruct his therapeutics, to lift it out of the commercial mire into which he has allowed it to sink. It is within his power, as yet, to do this by the adoption of the simple, honorable standard of prescribing only those drugs that he himself absolutely knows. This method of honorable dealing with it the public has believed he has been following all along. And when the public comes to a full realization that it has not received a square deal from the one profession of all professions from whom it has a right to expect fair treatment, it will be a time when the man who has not dealt squarely with it wants to get from under! And it is for every individual physician to determine whether or not he is that man!

Clinical Notes

THE APPENDIX FORMING A DUODENAL-CECAL CANAL.

A. G. POHLMAN, M.D.
BLOOMINGTON, IND.

The following case is not deemed of sufficient clinical importance to merit a more detailed description, but it is of interest in that it shows the possibilities of the body to react to a variety of insults. The case was apparently one of downward displacement of the duodenum, the latter coming in contact with a retrocecal type of appendix. The chronic peritonitis seemingly tied the viscera firmly together and probably the independent contractions of the appendix irritated the duodenum, causing ulceration with perforation into the appendix. The fecal matter probably came from the cecum. The appendix was not thickened and the mucous lining of the canal was intact. Histologic examination was not carried out, owing to the character of tissue preservation.

Autopsy, subject No. 40, male, colored. Cause of death, pulmonary tuberculosis. Abdomen dissectors: Collins and Bennett.

The peritoneal cavity was almost entirely obliterated by a chronic peritonitis. Adhesions were dense and were separated with difficulty, particularly about the region of the gall bladder. There was slight enteroptosis; the cecum was placed a trifle higher than usual and was found attached to the transverse duodenum by a dense adhesion which was preserved as a possible appendix. The connection was found patent to the probe, and on opening it a canal was disclosed, about 4 cm. (1½ in.) long, and with a lumen throughout the entire length of about 2 mm. (1/12 in.). This canal opened into the cecum posterior to the ileocecal valve, while the distal extremity was adherent to the transverse duodenum on the dorso-inferior aspect. The canal was filled with fecal matter and presented a slight intraluminal adhesion at either end, composed for the most part of mucous membrane. The proximal opening was free and direct, while the distal opening passed obliquely through the duodenal wall and was covered by a pocket of the duodenal mucous membrane.

THE OCULAR REACTION TO TUBERCULIN: A WARNING.

M. J. ROSENAU, M.D.
Director Hygienic Laboratory, U. S. Public Health and Marine-Hospital Service.
AND
JOHN F. ANDERSON, M.D.
Assistant Director Hygienic Laboratory, U. S. Public Health and Marine-Hospital Service.
WASHINGTON, D. C.

The ocular reaction to tuberculin is the best example that we have of a local hypersusceptibility or anaphylaxis. Since attention was drawn to the practical diagnostic value of this phenomenon, its use has become widespread. The test is attended with certain inconveniences, and as we shall now point out, is liable to misinterpretation.

We show in the following experiments that the conjunctiva of man may be rendered sensitive by the application of tuberculin, so that it reacts specifically to a second instillation. In our experiments, fifty-one days elapsed betweeen the first and the second applications.

No.	Name	First Instillation: Tuberculin used	First Instillation: Result, hours after injection 1	2	3	4	5	6	24	Interval in days	2d Instillation Tuberculin used. No. 2, 1 per cent. Result, hours after injection 1	2	3	4	5	7	24
1	JFA	No. 2, 1 per cent.								51	s	m	M	M	M	M	M
2	WWM	No 1/2, 0.3 per cent.								"							
3	RdMT	" "								"							s
4	RH	" "								"				s	m		M
5	FJH	No. 2, 1 per cent.								"						s	M
6	EE	" "								"			s	m	m		M
7	JG	" "								"		s	m	m	M	M	M
8	CGC	" "								"					s		M
9	MJR	" "								"							s
10	JHH	" "								"							
11	RCB	" "								"			s	m	m		M
12	FGW	" "								"							M

s = slight reaction; m = moderate; M = marked.

Twelve adult males in apparent good health, all members of the Hygienic Laboratory corps, were treated with tuberculin, by dropping it on the right conjunctiva. Not the slightest result apparently followed this first treatment. After an interval of fifty-one days, precisely the same amount of the same laboratory number and strength of tuberculin was again used in the same eye, except in Cases 2, 3 and 4, in which a weaker tuberculin was used at the first instillation. This time ten of the twelve persons gave a typical reaction, consisting of injection, mucopurulent discharge, etc. The symptoms came on very promptly in two of the cases; in one hour in Case 1, in two hours in Case 7, in three hours in Cases 6 and 11, in four hours in Case 4, in five hours in Case 8, in seven hours in Case 5; and the redness and injection of the other cases was apparent next morning. In four of the cases the reaction was violent enough to cause some concern. In one of these, the reaction was accompanied by subconjunctival hemorrhage.

How soon after the first application of tuberculin this sensitization comes on, and how long it lasts we do not know. We have also not yet determined whether the anaphylaxis is strictly local; that is, we can not answer the question whether the other eye is also in a condition of anaphylaxis. Nor do we know whether this sensitiza-

tion in the eye would be followed by general hypersusceptibility, manifested by a reaction to the subcutaneous injection of tuberculin.

Physicians must be cautious not to condemn the tuberculin of one manufacturer, if it gives a negative result, though a second application of tuberculin of another make proves positive when instilled into the same eye. In fact, we were partly led to make these experiments from the remark of a clinician who blamed the first tuberculin he used, while tuberculin of a different make used two weeks later gave a sharp reaction. Of course, the diagnostic value of the reaction in an eye that has had a prior treatment some days before is entirely negative.

The power of tuberculin to sensitize the conjunctiva is a beautiful example of the usefulness of the state of anaphylaxis. The conjunctiva or any other tissue in such a condition of hypersusceptibility is armored against bacterial invasion. Thus, if a tubercle bacillus lodges on a tissue having the power to react at once, that tubercle bacillus would immediately be surrounded with the protecting humors and cells of the body. In other words, the natural immunizing agencies of the body would at once be concentrated on the spot where they are most needed.

AN APPARATUS FOR THE INTERMITTENT POSTOPERATIVE DRAINAGE OF THE BLADDER.

APPLICATION OF THE PRINCIPLE TO THE DRAINAGE OF EMPYEMATA, ETC.

A. J. A. HAMILTON, M.D.
Senior House Surgeon Carney Hospital.
BOSTON.

The satisfactory postoperative drainage of the bladder has always been a most perplexing problem. Satisfactory drainage after cystostomy, for instance, drainage that is effectual and allows the patient to be kept dry is manifestly a most important factor in the attainment of a speedy, comfortable convalescence. The trouble arising from plugged tubes and catheters, and the discomforts endured by a patient constantly soaked in urine are such that life becomes burdensome to the patient and bothersome to surgeons, house officers and attendants.

Intimate contact with a number of cases in which drainage was attempted with indifferent success led me to undertake experiments which finally resulted in devising the apparatus herein described. It has been used with satisfactory results in drainage of the bladder after both suprapubic and perineal cystostomy and in the postoperative drainage of empyemata. Through the courtesy of Drs. Munro and Bottomley the suitable material in the surgical wards of the Carney Hospital was placed at my disposal.

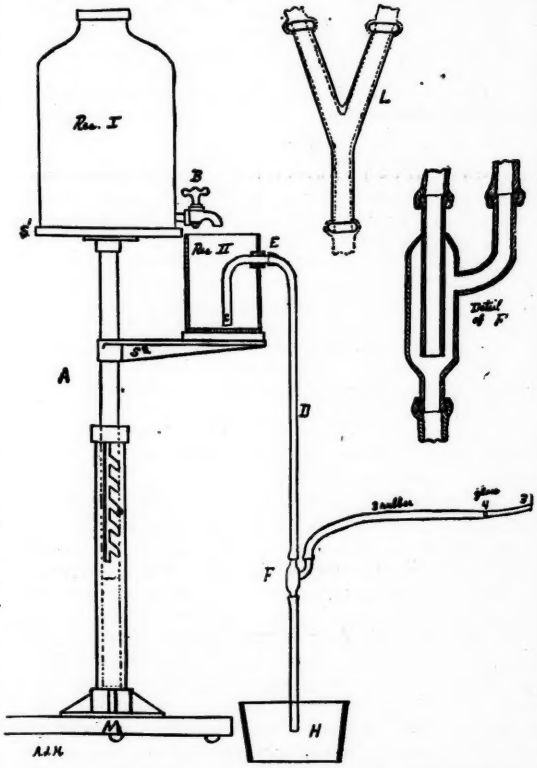
DESCRIPTION OF THE APPARATUS.

A glass reservoir (Res. I) with a capacity of about two gallons (i. e., a sufficient supply to last several hours) is placed on a horizontal shelf (S^1) supported by an adjustable standard (A) on a movable base (M). Projecting from the standard is a second shelf (S^2) for the support of a second and smaller (capacity, one pint) reservoir (Res. II) into which the larger reservoir feeds at a rate which can be regulated by an adjustable cock (B). Through a perforated cork in an opening from 1½ to 2 inches from the top of Reservoir II passes a bent glass tube (C), one end of which should be close to the bottom of the reservoir, and which forms the short arm of a siphon, the long arm of which is the rubber tube (D) attached to the bent glass tube at E; the lower end of the rubber tube (D) joins with a hydraulic pump (F) placed below the level of the cavity to be drained and connected with it by a rubber-glass connection (3, 4, 3). The pump empties into a receptacle (H) beneath the bed. The caliber of tube G should not be larger than that of tube D.

As a substitute for the hydraulic pump a glass Y-tube (L) may be used, but it does not work so satisfactorily.

THE WORKING OF THE APPARATUS.

Reservoir I is filled with water. The outflow into Reservoir II is regulated according to the quantity of discharge to be removed from the cavity which is to be drained. It is evident that the greater is the outflow from Reservoir 1 to Reservoir 2, the sooner will the latter be filled to the level of the perforated cork which allows the water to run down the tube D into the hydraulic pump which is thus put in action and drains the cavity by virtue of a well-known principle of physics. In other words, the greater the outflow from Reservoir I to Reservoir II,



Res I, glass reservoir with capacity of about 2 gallons; res. II, reservoir with capacity of about 1 pint; S^1, horizontal shelf; A, movable base; S^2, second shelf for support of reservoir II; B, adjustable stop-cock; C, bent glass tube; D, rubber tube forming long arm of siphon; E, junction of D, with bent glass tube; F, hydraulic pump; H, receptacle into which pump empties; L, glass Y-tube which may be used as a substitute for the hydraulic pump; G, connection of drainage tube to hydraulic pump.

the oftener will the latter be emptied by siphonage, the oftener will the pump work, and the oftener will the bladder or other cavity be drained. The frequency of the action of the pump is to be regulated according to the amount of urine or other secretion to be removed.

ADVANTAGES OF THE USE OF THE APPARATUS.

After either suprapubic or perineal prostatectomy the apparatus may be connected with the cavity either through the suprapubic or the perineal wound, as the case may be. A brief experience will soon teach one how

often it is necessary that the pump should work in order that the bladder may be emptied of urine and the dressings kept dry. After three or four days, when the urine is free from blood and pus, the tube may be removed from the operation wound, the apparatus connected with a catheter introduced into the bladder *per urethram* and the operation wounds allowed to heal. Thus the period of convalescence is not only made much more comfortable but is much shortened.

Patients who are convalescent after operations for empyema can be detached from the apparatus and move about the wards. They know the interval between successive emptyings of Reservoir II and at the proper time reattach themselves to the apparatus, have the cavity pumped out, detach themselves again, and again move about, if they so desire.

The apparatus is self-acting and needs but little attention. Reservoir I has to be filled twice in twenty-four hours; in other respects, the apparatus cares for itself. It is cheap, easily set up, movable, simple and satisfactory in its action. There is no reason why it can not be used in the drainage of any deep cavity in which an exudate accumulates.

VAGINAL HYSTERECTOMY FOR HYSTERO-VAGINO-ENTEROCELE.

EDWARD N. LIELL, M.D.
JACKSONVILLE, FLA.

History.—Mrs. X. for twelve years had what she termed "falling of the womb." For the past four years, especially when on her feet, there was complete eversion of the vagina and prolapse of the uterus and intestines, the whole mass being the size of a child's head. The uterus was very much enlarged, being in a condition of hyperplasia. Various supports had been tried without relief, the condition being a source of great discomfort to her. A radical operation, as well as a choice of route, was obvious. Vaginal hysterectomy was the operation elected.

Operation.—In operating in such a condition of enormous prolapse, the one difficulty naturally met with is ascertaining the line of reflection of the bladder from the cervix. The operation as performed was as follows: A curved incision was made through the vaginal wall, taking care not to injure any intestine which was included in the projecting mass of tissue. The anterior fornix was next incised down to the uterus below the line of reflection of the bladder and prolonged laterally to meet the posterior incision. The bladder wall was then separated with the fingers and scissors, the separation being extended well to the sides of the uterus in order to be well away from the ureters. In the subsequent successive ligation of the uterine and ovarian vessels, and transfixion of the broad ligament, preliminary to complete division of the uterus and appendages, silk was used, the ends being left long to facilitate their removal. The broad ligament pedicles were then drawn partially into the angles of the vaginal opening and included in the partial suturing of the latter with chromicized catgut. The central edges of the vaginal wound and peritoneum were also well approximated by similar sutures, leaving a small opening on each side into which strips of iodoform gauze were inserted for drainage.

In my opinion, it is safer to provide for drainage than to close the vaginal vault primarily in vaginal hysterectomy. The subsequent history of the patient was uneventful, the result of complete extirpation being one of permanent relief, at least up to the present.

Opsonins.—R. Walker, in the *Jour. of Med. Research*, states that for species for which but little opsonin exists in the blood, as, for example, the typhoid bacillus, comparatively fewer germs are necessary and the serum need not be diluted.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(A list of all accepted articles is published on one of the advertising pages of The Journal in the first issue of each month.)

(Continued from page 879.)

LECITHOL.

An emulsion-like solution of lecithin containing 18 per cent. of absolute alcohol by volume, and .06 Gm. (1 grain) of lecithin per 4 Cc. (1 fluidram).

The lecithin is separated from hogs' brains.

An opalescent yellow liquid of pleasant taste and odor.

Tests: From lecithol, 10 Cc., the alcohol is removed by evaporating on the water-bath; then water, 90 Cc., is added. Next concentrated hydrochloric acid, 2 Cc., is added, and then, with thorough shaking gradually 2 Cc. chloroform. The liquid precipitate which separates out, containing nearly all the lecithin, is collected and treated with strong sulphuric acid and fuming nitric acid. After all the organic matter is decomposed, the phosphorus is determined in the usual way. From this the percentage of lecithin is calculated.

Actions and Uses.—See Lecithin.

Dosage.—4 to 8 Cc. (1 to 2 fluidrams) immediately before or after meals.

Manufactured by Armour & Co., Chicago.

NEURO-LECITHIN—ABBOTT.

A preparation containing lecithin with small amounts of fats and cholesterin, the amount of lecithin being determined by assay.

Neuro-lecithin is said to be made from the brain and spinal cord of animals. The water and fat are separated by heat; the soluble portions are extracted from the residue with ether; this is precipitated with acetone.

For properties and tests see Lecithin. The amount of lecithin is determined by a quantitative estimation of phosphorus and nitrogen. The material is exhausted with ether-alcohol at the boiling point of the mixture, the solution evaporated, the residue fused with sodium carbonate and potassium nitrate and phosphorus determined in the fusion. The amount of phosphorus found multiplied by 26 (806/31) is taken to indicate the amount of lecithin.

Actions and Uses.—See Lecithin.

Dosage.—0.03 to .13 Gm. (½ to 2 grains) two or four times daily. Neuro-lecithin is put up in tablets and pills, each containing 0.03 Gm. (½ grain).

Manufactured by the Abbott Alkaloidal Co. U. S. trade-mark No. 65384.

SYRUP CANNABIS COMPOUND, P.-M. Co.

Each 30 Cc. (1 fluidounce) is said to be equal to cannabis indica .5 Gm. (7½ grains), heroin hydrochloride, .020 Gm. (⅓ grain), chloroform, .25 Cc. (4 min.), lobelia, .5 Gm. (7½ grains), antimony and potassium tartrate (tartar emetic), .008 Gm. (⅛ grain), with aromatics; alcohol, 10 per cent.

Dosage.—4 Cc. (1 fluidram) to 8 Cc. (2 fluidrams) every two or three hours.

Prepared by the Pitman-Myers Co., Indianapolis. Not copyrighted or patented.

(To be continued.)

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[For other information see second page following reading matter.]

SATURDAY, MARCH 21, 1908.

THE PATHOGENY OF SPASTIC RIGIDITY IN CHILDHOOD.

There occur during childhood a number of disorders of motility attended especially with spasticity, of some of which the anatomic basis has been made clear, while the origin of others is still involved in obscurity. One of the most interesting of this group of affections is tetany, which appears to be much less common in the United States than in certain parts of the continent of Europe. There is some reason for believing that a variety of conditions have been comprised under this designation so that we may be dealing with a symptomatic manifestation rather than a definite clinical entity.

The entire subject is given most thorough discussion in an admirable paper by Archambault and Baldauf,[1] who report two cases originally thought to be examples of tetany, but one of which was later found to be an instance of cerebral diplegia due to cerebral sclerosis, and the other an instance of chronic internal hydrocephalus due to cerebral tumor. In both cases there were present after death, in addition, marked thickening of the walls, more especially of the medium-sized and smaller blood vessels of parts of the cerebrospinal nervous system, partial fibrous obliteration of a few, cellular occlusion or thrombosis of many of them, perivascular dilatation and evidence of chronic fibrous leptomeningitis and ependymitis, marked thickening of the subpial and periependymal layers of neuroglia, together with various types of cellular degeneration. From their own observations in conjunction with a study of the literature of the subject Archambault and Baldauf are of the opinion that a large number of toxic substances, of varied nature and origin, are capable of causing cellular and interstitial changes in the parenchyma of the central nervous system, and many of them are capable of giving rise further to tetany of more or less complete type. Such association, however, is not invariable, depending on the intensity and duration of the irritative process and on the susceptibility or resistance of the individual.

It is thought probable that tetany possesses no characteristic anatomic substratum, the lesions that have been regarded as pathognomonic of it merely representing the reaction of nervous parenchyma to the irritating influence of an existing toxemia. The changes in the nervous system may take place without the development of tetany, while on the other hand tetany may be present without the discovery of any appreciable alteration in the central gray matter. Spastic rigidity, whether symptomatic of some well-defined nervous disorder or appearing as an isolated clinical manifestation, is looked on as the result of vitiated or disordered innervation of, or impulse-transmission to, the peripheral motor neuron, which may be dependent on either irritation or partial destruction of the central motor neuron in any part of its course from the Rolandic cortex to its point of arborization about the multipolar nerve-cells of the anterior horns of the spinal cord, or on inhibition or loss of function of the co-ordinating centers of the spinal cord in the intermediate gray matter. Extramedullary or meningeal lesions, under certain circumstances, may disturb the normal transmission of impulses sufficiently to bring about the same phenomenon. Spastic rigidity may be marked or slight, with all intermediate degrees of severity; and it may be either continuous or paroxysmal, in proportion to the intensity and extent of the underlying lesions. Spastic manifestations may result not alone from disease of the meninges, but also from that of the gray matter surrounding the aqueduct of Sylvius, the cavity of the fourth ventricle and the central canal of the spinal cord. Internal hydrocephalus unapparent or inappreciable clinically, is not particularly uncommon in infants and young children. The diagnosis is difficult and the presence of changes in the optic nerve, and often of local manifestations as well, suggest the existence of cerebral tumor.

1. Albany Med. Ann., January, 1908, p. 81.

THE DECREASE OF TUBERCULOSIS.

Several years ago Dr. T. Bulstrode, one of Great Britain's medical inspectors, wrote concerning consumption: "The object of preventive medicine is to curtail and, if possible, to prevent disease, to prolong existence and to render life happier by means of improved physical conditions." To-day it would seem that the ideal thus set is steadily nearing realization. Dr. Bulstrode, in the territory over which he has had supervision, has given evidence of such advance, as may be judged from the recent important report by the medical department of the British Local Government Board. The statistics presented show an amazing decrease in the death rate from tuberculosis in England and Wales, and they form the basis of an opinion that possibly, within the lives of those now living, this disease may become as rare as leprosy and typhus fever are to-day. In 1838 tuberculosis destroyed in England and Wales 59,025 lives; in 1906, although the population within these boundaries had greatly increased, this disease destroyed only 39,746 lives—11.5 for each 10,000 persons then living. The tuberculosis mortality in 1906 was about equal to the decrease observed in the preceding thirty years; it would follow, therefore, that the disease should disappear totally within the coming three or four

decades were the decrease in the death rate to continue at the same rate.

We can not, of course, assume any such steady and progressive decrease; the successful prophylaxis against tuberculosis depends on too many factors. There is not only the work accomplished by the medical profession either as individuals or in the public service; there are also the efforts made, not necessarily by physicians, to destroy the germ-ridden structures, and to erect in their stead model tenements; the propaganda against the exhausting effects of woman and child labor and against impure foods, especially impure milk and meat. There are the successful efforts to enlist the cooperation of statesmen and humanitarians; architects and contractors have realized the importance of enlisting the advice and services of experts in hygiene. There are vast improvements in economic conditions. Tuberculosis has so many and so varied etiologic factors, besides the germ which is its essential cause, that a successful antituberculosis warfare means the triumphant entry of sanitary science into every phase of our complex modern civilization. Thus we may entertain the hope that before many years consumption will be bereft of most of the terrors which till now have attended it.

What are the reasons for the diminished ravages of tuberculosis? The present fortunate situation can not be ascribed entirely, or even mainly, to the discovery of the tubercle bacillus in 1882; for our treatment of the disease was instituted by Bodington and Brehmer many years previously, and was established in America several years before by Trudeau at Saranac Lake. Nevertheless, Koch's great discovery has put preventive measures against tuberculosis on a scientific and rational basis; and of these measures undoubtedly the most important and the most effective (in cities at least) has been the compulsory notification and registration of cases.

Nor does Bulstrode attribute the greatly decreased mortality to the establishment of sanatoria. Very few of these institutions were operative in 1885, yet the consumption death rate had shrunk by that year to about one-half of what it had been in 1838—from 39.9 for each 10,000 persons to 18. No matter how numerous are these institutions, they can not begin to accommodate a tithe of the consumptives. Yet, considering their number, they constitute an ideal means for the cure of the disease, for in them the patient has the best chance of recovery. While he is thus under treatment he is not infecting his family, his fellow workmen and his neighborhood; and when he leaves he goes forth a missionary, spreading throughout the community the sanitary principles which have been inculcated in him.

One reason for the decrease in the mortality rate has certainly been the gradually weakened virulence of the tubercle bacillus, coupled with a simultaneous increase (through better living conditions) in the organism's capacity of resistance, as evinced in phagocytosis, in the opsonic power and in like disease-resisting forces. The mixed infections are also probably made less easy of development by modern sanitation. In these respects tuberculosis but follows the laws which obtain in infections generally. We have become familiar with postmortem reports from many parts of the world which prove that consumption is now far less fatal than formerly, and that great numbers who have died of other diseases have shown on autopsy latent or healed tuberculous lesions.

Bulstrode coincides with the now general belief that Koch's opinion as to the harmlessness of the bovine tubercle bacillus is erroneous; and he insists, so far as England and Wales are concerned, that the milk and meat supplies need more careful supervision than has hitherto been given them.

THE SAFEGUARDING OF BIOLOGIC THERAPEUTIC AGENTS.

In introducing animal products into our therapeutic armamentarium we have also introduced opportunities for unintentional transmission of those diseases from which the animal furnishing the products may be suffering. This is a danger against which every precaution is taken by all who are engaged in the preparation of such biologic products, and the accidental transmission of disease by this method is, therefore, a most rare occurrence. The chief expense of such preparations as diphtheria antitoxin does not lie in the actual cost of producing the antitoxin, but in securing the absolute purity and safety of the product. It would be a simple matter to inject a horse with diphtheria toxin, draw off its blood and secure a large amount of an effective antitoxin at a very small cost. But it is the expert care and supervision, the skilled labor and the extensive animal experimentation that is required to insure the sterility and absence of toxicity of the antitoxic serum which makes the marketable product expensive; and it is only in consequence of this care that we feel free to use the antitoxic sera, vaccine virus and other biologic products that are available to us, knowing that harmful results are so very infrequent that they are lost sight of in the good that is done.

It is of the utmost importance that this feeling of safety should continue to exist, not only for the benefit of the particular patient on whom the biologic product is used, but, what is vastly more important, for the benefit of the community at large. An antitoxic serum contaminated with tetanus may result directly in the death of one or several persons, but the influence of this accident on the public is far more deadly, for it prevents the use of antitoxin in innumerable subsequent cases in which it is imperatively needed, and retards seriously the widespread application of all the biologic therapeutic methods. The above facts, and many others of similar import, are brought forward strikingly in the paper by Dr. Theobald Smith which we publish this

week. As Dr. Smith says: "It is far easier to arouse the nervousness of the public than to allay it," and in actual experience there is little question that the remote results of each accident of immunization and serum therapy have been much more serious than the particular individual fatality it may have caused. How constantly we still hear urged against vaccination the danger of syphilization, in spite of the fact that human vaccine virus has been in almost absolute disuse for many years. For how many decades will that early German fatality from diphtheria antitoxin be brought forward as an obstacle to stand in the way of life-saving efforts?

At present the chief danger that is apparent in all the biologic products is tetanus, which has appeared as a danger not only in the use of immune sera and vaccination, but also in every subcutaneous use of animal products, as was shown by the numerous fatalities that resulted from the use of gelatin as a hemostatic. There is also reason to apprehend danger of the same kind in the new use of bacterial products in therapy—the so-called "vaccine therapy." Of course the reason for this danger from tetanus lies in the great resistance which the spores of the tetanus bacillus have to heat and to antiseptics, so that they readily pass through ordinary sterilizing processes, and, retaining their vitality for an almost indefinite period, cause their fatal effects at the first suitable opportunity. In his valuable paper Dr. Smith points out serious and widespread misunderstandings concerning the resistance of tetanus spores to heat, which misunderstandings constitute perhaps the greatest danger now existing in the preparation of biologic products. This paper should help to dispel this error and remove a very great and very real source of danger. Dr. Smith's closing remarks are so appropriate, and carry a lesson that is so seriously needed, that we quote them here for the sake of emphasis: "Whenever practice outruns the laboratory, and, more or less impatient, applies the latter's results to the prevention and cure of the disease, it frequently deals with half truths whose application may be harmful. It is this sense of being surrounded with half truths which should stimulate us all not to rest content with them, but to use our efforts unremittingly until they have been made whole."

CARCINOMA FROM ROENTGEN-RAY BURNS.

In the obituary column[1] we refer to the death of another *x*-ray worker, Dr. R. V. Wagner, of Chicago, from secondary carcinoma beginning in the skin, the seat of chronic *x*-ray dermatitis. The number of fatalities of this sort is now large, and it furnishes a pitiful tribute to the enthusiasm of the early worker in this fascinating field. The train of events in these cases is extremely interesting and throws light on the pathogenesis of carcinoma, at least as it occurs in the skin. All these cases, so far as we know, have occurred in radiologists who began the work in the early days before the dangers of the Roentgen rays were fully recognized. All the individuals were victims of long-continued low-grade *x*-ray dermatitis, kept up by persistent exposure to the rays in spite of the skin lesions. In many cases there has been a primary acute burn, in others only the subacute reaction; but in all there has resulted the chronic atrophic dermatitis which we have now learned is characteristic. In these cases the skin becomes thin, harsh and cracked, its surface reddened by lines and clusters of dilated capillaries and roughened by keratoses, the latter being the danger spots in which epitheliomata develop. The whole condition is, in fact, an exaggerated picture of the senile skin of the type in which we see epitheliomata, often multiple, develop. Indeed, so close is this resemblance that the development of epitheliomata in chronic *x*-ray burns was prophesied before their occurrence was established.[2]

There is probably a close essential resemblance between the precancerous keratoses of old age and those of chronic *x*-ray dermatitis. As Hyde[3] has strongly emphasized, there is a striking relation between the vulnerability of the skin to light and the occurrence of epidermal cancer. The most extreme illustration of cutaneous irritability to light is seen in the families with xeroderma pigmentosum. Here the exposed parts manifest all the changes of the most extreme degrees of senile skin in early childhood; epitheliomata develop and the patients die of carcinoma while still children. It is probable that the type of senile skin, filled with telangiectases and dotted with keratoses, in which epitheliomata develop, is largely an expression of the irritating effect of the actinic rays of light acting over long periods of years on skin which is inherently susceptible to this form of irritation. The notable absence of epithelioma in the negro whose skin is protected from the effects of light by a thick layer of pigment is confirmatory of this view. In the precancerous keratoses of old age and of xeroderma pigmentosum, and in those of chronic *x*-ray dermatitis, the results are the same; the only difference is that in the one case the irritating agent is light, in the other *x*-rays, which from their vastly more powerful actinic properties may produce in a short time the condition which light produces to a less degree (except in the rare cases of xeroderma pigmentosum) only after many years. Another evidence indicating that the epitheliomata from Roentgen rays do not differ from the usual senile epitheliomata is found in the fact that even such lesions may themselves be destroyed by *x*-rays. How actinic energy produces these changes we can only speculate. We know that cutaneous epithelium is distinctly irritable under actinic energy, and it is probable that in epitheliomata developing from the effects of light and the Roentgen rays we have merely one of the illustrations of the well-

1. Page 983 of this issue.

2. Pusey and Caldwell, First Edition, p. 230.

3. Influence of Light in the Production of Cancer of the Skin: Am. Jour. Med. Sci., January, 1906.

recognized tendency of carcinoma to develop as a result of long continued irritation of any sort. It is probably true, however, that in the effects of actinic energy (including, as it does, light) we have the most important cause of epidermal cancer.

The prophylaxis of *x*-ray carcinoma consists, of course, in avoidance of undue exposure to the rays. The person who is nearest to the danger is the radiographer, who uses enormous quantities of this form of radiant energy in making skiagraphs. He, in particular, should avoid exposures, and should by the use of shields confine the rays closely. Fortunately, as the Roentgen rays travel only in straight lines, it is not difficult to prevent their diffusion. Now, since the grave dangers are known, there are few radiologists who are careless about exposures. The commonest danger is in the habit of testing the tube with the hand before a fluoroscope. Such a habit, if persisted in, is most dangerous.

Scores of men who already have *x*-ray burns on their hands are asking what is to be done for them. In the first place they should be protected from further irritation of the same nature, and other forms of irritation should be avoided so far as possible. In most cases some protection and comfort are obtained by the frequent greasing of the hands with a bland salve, like fresh rose ointment.

Another method which deserves mention is the application to the parts of heat, either by immersing them in hot water or by the use of hot applications. These are at times comforting and cause definite improvement. Various other modes of soothing treatment have been tried, but it must be recognized that none of them is of permanent benefit. The most important matter is the care of the keratoses, and if radical treatment is tried on them it should be vigorous enough to destroy them. The use of keratolytic agents like salicylic acid to dissolve them off is dangerous because it irritates without destroying. Many of these keratoses never give trouble. The first evidence of danger is for the base to become red and, perhaps, tender. When that condition persists it is evidence that the keratosis is epitheliomatous. The non-irritated keratoses are better destroyed; the irritated keratoses should be destroyed if it is possible. The best way to do this is to excise them, if this is practicable, and then to put on a small graft. This method has been carried out successfully in numerous instances within our knowledge. They may also be destroyed by caustic potash, zinc chlorid, the actual cautery, or by deep freezing with liquid air or solid carbon dioxid. All these methods are practicable when intelligently and patiently carried out.

The importance of destroying these keratoses which show persistent irritation while they are small can not be emphasized too strongly. They are dangerous, if let alone, and they can be handled successfully if taken before they become too extensive.

THE COUNCIL ON PHARMACY AND CHEMISTRY.

The Council on Pharmacy and Chemistry has now been in existence three years, during which time there has been no change in its personnel.[1]

The Council at first was organized in a more or less tentative way, with no definite plan as regarded its perpetuation, this being left for the future to develop. As will be noted, however, in the Pharmacology Department this week,[2] definite by-laws and regulations relating to the permanency of the Council have now been adopted. It will be noticed also that the first change in the membership of the Council has just taken place. This would seem an opportune time to call attention to the immense amount of self-sacrificing work this Council has done during these three years; to enlarge on the splendid character of this work and its far-reaching results, and to advert to the good that already has been accomplished in many ways. This, however, must be left for another time.

To the fifteen who have constituted the Council during these first years the medical profession of the United States, and, for that matter, of the world—for the influence of their work has been felt in other countries than this—owes a debt of gratitude, not alone on account of what has been accomplished, but also because those who have constituted the Council during these first years have had to endure the scoffs, the insults, and the imputations cast on their integrity by those whose financial interests were jeopardized through the investigations. During these three years no one has found ground to cast suspicion on a single member. Even those who for selfish reasons wished to see the work fail, because of the damage threatened to their business—even these have been able only to ridicule.

And the future is equally promising, so far as the character and standing of the men who constitute the Council are concerned. Certainly the profession is to be congratulated on the fact that the Board of Trustees has been able to secure as members of the Council such men as the three just elected. Dr. Capps, who is in active practice, has done and is doing considerable original investigation relating directly to internal medicine. Dr. Edsall, also in active practice, is especially a valuable acquisition to the Council on account of the work he has done in metabolism, etc. Professor Folin is recognized, both in this country and abroad, as one of the leading authorities on physiologic chemistry. His knowledge will be most valuable in helping to solve some of the questions that come before the Council, especially such as relate to the possibility of asserted chemical reactions in the system of ingested medicaments.

We print this week a complete list of the present mem-

1. An exception to this statement should be made since Prof. Cushny was originally a member of the Council, but resigned on his removal to England to take the chair of pharmacology at the University of London, at which time, however, he was elected a corresponding member. Also, Professor Thoms, director of the Pharmaceutical Institute of the University of Berlin, has been added as a corresponding member during the time.

2. Page 976.

bers, with their positions. It is well worth the while for physicians to ponder over what it really means to have such a body of men represent them in this important work.

Another important step forward is the creation of the Staff of Clinical Consultants, also mentioned elsewhere in connection with the above. The function of the Council is not to decide on the therapeutic value of a preparation, but on its composition; to answer the questions: What is it? Is it what it is claimed to be? Only when the statements made by the proprietor regarding the therapeutic properties of his product have been evidently at variance with accepted facts has the Council taken any cognizance of them. But such statements are made frequently, so that the need of the advice and assistance of clinicians has often been felt; and while hitherto there has been no great difficulty in obtaining such assistance from individual physicians, the desirability of forming such a consultative body—one to which the Council can turn freely at any time—has made itself more and more evident.

Here again the profession is to be congratulated on the selections made and especially on the fact that men who are busily engaged in active practice should be willing to make sacrifices for the common good. It will be noticed that on the staff of clinical consultants are to be found the general practitioner—both the country doctor and the city man—the consultant and the specialist; also that every part of the country is represented. If we are not mistaken, the creation of this body is the entering wedge of a movement for a more scientific investigation of the therapeutic value of drugs of all kinds, that will result, among other things, in eliminating not a few of those now in the Pharmacopeia, and in reaching definite conclusions as to the therapeutic value of this or that drug. This, however, is for the future.

Once again, we repeat, since all the members of the Council on Pharmacy and Chemistry, as well as those of the new Staff of Clinical Consultants, are men busily engaged in active work, since the work they do on the Council is often most perplexing, arduous and difficult, and since it is done gratuitously and solely in the interest of scientific medicine, is it too much of a request to ask for them the hearty support of every member of the medical profession? We can not think so! We further suggest that there are two ways in which practical support can be rendered: One by refusing to prescribe any proprietary remedy that has not been accepted by the Council; the other by refusing to subscribe to or to encourage any medical journal that is advertising proprietary preparations that have not been passed on by the Council. Even the former alone will be very effective, and possibly we are presumptuous in suggesting the latter.

Our readers, of course, know that there are still several pharmaceutical manufacturers who refuse to recognize the Council's work and objects, and this will continue just so long as physicians remain lukewarm in the matter.

THE KENTUCKY PURE FOOD LAW.

In another department[1] appears an abstract of the pure food and drug law recently enacted in Kentucky. The law is the result of the combined efforts of the members of the Kentucky State Medical Association, the State Board of Health, the State Pharmaceutical Association, and the Board of Pharmacy. Much credit is also due to the chief of the State Agricultural Experiment Station. In securing its passage all the influential bodies in the state that could possibly be aroused, including the State Federation of Women's Clubs, were interested. Besides being, perhaps, the best general pure food and drug law as yet adopted, some unique features are incorporated in the act. In regulating the inspection and sale of milk it is provided that no milk shall be designated as "certified milk" except on the authorization of a regularly constituted county medical society. This feature is the result of the work of the Milk Commission of the Jefferson County Medical Society, which took up the regulation of the milk supply of Louisville. The prompt recognition of the value of such services is a gratifying evidence of the spirit in which the public will endorse the work of county medical societies along practical lines. The law also provides that no physician's prescription may be refilled except for the person for whom it was written. The value of such a provision for the protection of public health is obvious. The enforcement of the law is placed in the hands of the chief of the State Agricultural Experiment Station. Great credit is due not only to the physicians of Kentucky, but also to the laymen; it is especially gratifying to learn that the members of the state legislature favored the measure with practical unanimity. More and more our legislators are appreciating the necessity of adequately safeguarding the lives and health of the people. This is surely one of the first duties of the conscientious lawmaker, as is being realized by our leading statesmen. Carefully drafted and impartially enforced health laws, together with the moral and financial support of the health authorities by both the government and the people, will save thousands of valuable lives and millions of dollars in money to the country each year.

PHYSICIANS IN POLITICS.

A member of the Committee on Medical Legislation, comments this week[1] on the work recently accomplished in Ohio, where 105 physicians went to the state convention as delegates of one of the leading parties, the result being that, for the first time in the history of this country, a state convention adopted a platform containing a declaration in favor of the organization of a national department of health. It is hardly necessary to say that such a plank would never have been adopted

1. Department of Medical Economics, page 986.
1. Correspondence Department, page 978

had not a large number of physicians been sitting as members of the convention with the right to vote. This is in marked contrast to the attitude of the medical profession heretofore, which has been to send committees to stand without and to plead for desired legislation. Physicians hereafter, if the example of Ohio is of any value, will work and vote for needed reforms as members on the floor of the conventions and legislatures, and will not merely wait as visitors in the lobbies or appear before committees. If better conditions are to be obtained in municipal and state government, it must be through an appreciation of the fact that the proper work of government is administration and not exploitation of the public. With this in view, there is no reason why the physician should not prove as good an administrator as his brother the lawyer, to whom the lion's share of political duties and opportunities has been awarded in the past. Three-fourths of the work of the average legislative body today has to do with questions of administration. There is nothing in the personality, training or experience of the successful physician that would render him less effective in dealing with administrative problems than the lawyer or the business man; neither is there any reason why a physician should not demand and exercise his full rights as a citizen, especially since he is far better fitted by education and experience for dealing adequately with many of the problems of modern legislation than is the average lawyer. It can not be denied that the management and conduct of many of our state institutions would be far better were physicians represented on the legislative committees, or that better sanitary laws would be enacted if physicians had votes in the legislature instead of merely being represented by proxy. The message of the Ohio profession to the physicians of the country is, "If you want a thing done, do not send another, but go yourself." It is hoped that physicians in many other states will follow the example of their Ohio brethren.

MEDICAL MERIT HONORED BY THE CARNEGIE FOUNDATION.

The public rewards for long and faithful service to medicine are surely not so frequent that they should pass without professional recognition when they do occur. One of the veteran workers in the field of medicine and medical education in the United States, still surviving from a fellow-studentship with Webster, Clay and Calhoun at Harvard, is Dr. Stanford B. Chaillé, of Tulane University, New Orleans. On March 20 Dr. Chaillé completed his fiftieth year of honorable, loyal and faithful service, not only to the Tulane Medical College—the Medical Department of Tulane University—but to the science of medicine at large. It is therefore as fitting as it is gratifying that to Dr. Chaillé should have been awarded, by the Carnegie Foundation for the Advancement of Teaching, its maximum retiring allowance of $3,000 a year, a distinction that has been conferred on few, and of those few, we believe, never before on a member of the medical profession. We congratulate Dr. Chaillé on his good fortune, the medical profession on the honor conferred on it by the selection of one of its members for this benefit, and the Carnegie Foundation on its perspicacity in making the somewhat unusual discovery that transcendent merit occasionally exists in the profession of medicine as well as in other fields of public service. We heartily wish Dr. Chaillé many years in which to enjoy the fruits of a well-earned leisure.

ARMY REORGANIZATION BILL PASSES THE HOUSE.

The Army Medical Reorganization Bill passed the House of Representatives Monday, March 16, under suspension of the rules, by a vote of 126 for and 15 against. The bill passed the Senate as originally drafted. Owing to changes made in the House committee the bill now goes to conference. These changes are, with one exception, amendments which are entirely satisfactory to the friends of the bill. The reduction in the number of medical officers of the higher grades, however, seriously modifies the proposed plan of reorganization. It is earnestly to be hoped, therefore, that the original provision of the bill in this respect will be adhered to.

THE FIRST CONVICTION UNDER THE FOOD AND DRUGS ACT.

The first conviction under the national Food and Drugs Act has been secured in Washington, the case being that of Robert N. Harper, manufacturer of a nostrum known as "Curforhedake," "Brane-Fude." An abstract of the case with a summary of the charge of the trial judge to the jury appears elsewhere.[1] The practical common sense interpretation of the law by the judge in this instance is especially gratifying and commendable. He instructed the jury that the law was enacted for the protection of the ordinary average citizen and was to be interpreted with this point in view and that its meaning was not to be obscured by technicalities or expert decisions. This tendency to interpret the law in accordance with the language and phraseology used by those for whose protection the law was enacted should be followed by other courts before whom violations of pure food laws, both state and national, may be tried. The intent of these laws is manifest: to protect the general, non-scientific public against imposition and deception. The question of what a given term, sentence or formula would mean to the expert chemist or the trained pharmacologist has no bearing. The important point is, what impression does the average purchaser of the preparation derive from the claims made by the manufacturer? If the impression which he derives is in any way misleading or not borne out by the facts, then the manufacturer has violated the spirit of the law. Let it be again emphasized that this entire food and drug agitation, in all its ramifications, is simply a fight for commercial honesty and square dealing with the public. It is to be hoped that the decision of the court in this case will be sustained by the higher courts and that this example in the common sense interpretation of the law will be followed by other courts before which such cases may come in the future.

1. Miscellany Department, page 981.

Medical News

CONNECTICUT.

Physicians Honored.—At a dinner of the Yale Medical Faculty, held in New Haven March 5, special honor was tendered to Dr. William H. Carmalt, for more than 40 years a member of the faculty of the school; president of the state medical society in 1904; for 20 years secretary of the American Congress of Physicians and Surgeons, and now president of the American Surgical Association.——At a testimonial tendered to Dr. William C. Wile by the professional men of Danbury and vicinity, Rev. H. C. Meserve acted as toastmaster. Dr. Wile was lauded as the organizer of the Danbury Medical Society, and as responsible for many good works, both in and out of professional life, and he was congratulated on his restoration to health and activity, after a long and serious illness.——Local members of the New Haven Medical Association gave a dinner March 4 in honor of Dr. Edward K. Root, Hartford. He afterward read a paper on "Blood Pressure" before the association.

ILLINOIS.

Communicable Diseases.—The public schools of Rantoul are to remain closed for a week on account of the prevalence of scarlet fever.——The State Board of Health has received word that 4 additional cases of smallpox have appeared at Auburn.——At Harlem Center 20 cases of smallpox of mild type are reported.——There are said to be 15 well-developed cases of smallpox at Robinson and a quarantine has been established.

Personal.—Dr. Albert Green, Rockford, is confined to his house as a result of the fracture of a rib.——Dr. Arthur R. Adams, Macomb, expects to leave this month for Europe.——Dr. and Mrs. Albert Weil, Peoria, have returned from a trip to Cuba.——Dr. and Mrs. Thomas E. Roberts, Oak Park, sailed for Europe March 14.

Chicago.

Unlicensed Practitioner Fined.—J. C. Dyer, 6509 Minerva Avenue, charged with practicing medicine without a license, is said to have been found guilty March 10 and fined $100 and costs.

Personal.—Dr. and Mrs. D. A. K. Steele are taking a trip to California.——Dr. and Mrs. Jacob Frank have returned from New Orleans.——Dr. Alfred D. Kohn has been reappointed a member of the board of education.——Dr. Frank J. Dewey was painfully injured in a collision between his bicycle and a street car March 8.——Dr. Albert E. Froom has moved to Mount Rose, Colo.

Deaths of the Week.—During the week ended March 14, there were 639 deaths reported; 30 fewer than for the previous week, and 45 fewer than for the corresponding week of last year, the respective annual death rates per 1,000 being 15.38, 16.10 and 16.92. The diseases showing greatest decrease as compared with last year were: Cancer, 15, a decrease of 19; scarlet fever, 8, a decrease of 10; nephritis, 31, a decrease of 9; and whooping cough, 2, a decrease of 5. The chief increases in mortality were: From acute intestinal diseases, 50, an increase of 24; typhoid fever, 7, an increase of 5; diphtheria, 11, an increase of 5; violence, 44, an increase of 8; and measles, 5, an increase of 2.

Contagious Disease Situation.—The week ended March 14, as compared with the previous week, showed a material improvement in diphtheria and scarlet fever; 25 cases fewer of the former being reported and 12 cases fewer of the latter. As compared with the corresponding week of 1907, there were 185 fewer cases of these diseases. Chickenpox decreased 61.5 per cent. and typhoid fever more than 54 per cent., as compared with the preceding week. The cases of measles increased from 156 to 232; those of whooping cough from 14 to 27 and those of tuberculosis from 23 to 51. During the week 6 smallpox patients were taken to the Isolation Hospital, none of whom had ever been vaccinated.

Fraud Order Issued.—A fraud order was issued on February 12 by the Postoffice Department against the "Chicago Medical Institute," William Wood, secretary; "Dr. Dunn," George Gordon, secretary, and S. F. Francis, alias Dr. Dunn, with offices at room 201, 130 Dearborn Street. This institution is one of the many whose advertisements state that it never disappoints its patients, that it fulfills its promises, never holds out false hopes, cures varicocele in four days without pain, operation or ligature, cures prostatitis in ten to twenty days without cutting, dilating etc. On decoy letters being written to the institute, reply was received that it would use internal medicines and also urethral suppositories for the cure of prostatitis, and requested that $10 be paid in advance. A fraud order was issued about two years ago against the firm of Francis and Francis, which after being put out of business, induced Dr. Daniel Dunn to become a partner and carry on the business.

IOWA.

Affiliation Proposed.—At the regular mid-year meeting of the Board of Trustees of the Iowa Wesleyan University, February 21, the proposition of the affiliation of the Keokuk Medical College with the university was brought up for consideration.

Personal.—Dr. Oscar Fordyce, Guthrie Center, is said to be seriously ill with pneumonia.——Dr. William W. Hawks, Colfax, has been nominated as postmaster.——Dr. Fred P. Bellinger, Council Bluffs, has returned from Europe.——Frederick A. Slyfield, Iowa City, has been appointed first assistant state bacteriologist.

Dies Without Medical Attendance.—The 10-year-old son of an eddyist of Brazil died recently from pneumonia, after an illness of two weeks. This is said to be the second child to have died in the family treated only by the prayers of eddyists. The coroner's jury placed the responsibility for the child's death on the parents.

Hospital Opened.—On February 25, the new Oskaloosa Hospital, which has been completed at a cost of $15,000, held a shower and inspection day. The institution will have accommodations for 25 patients. At the shower quantities of linen, kitchen utensils, coal, fruit and canned goods and $350 in money were received. The advisory board consists of Drs. Jay G. Roberts, Lewis A. Rodgers and Ripley C. Hoffman.

Epidemic Diseases.—Charles City reports about 65 cases of measles.——Three deaths from cerebrospinal meningitis have occurred in Harlan.——Diphtheria has appeared among the students of the State University, Iowa City, and one of the fraternity houses is under quarantine.——Smallpox is reported to be epidemic in Allamakee County.——Smallpox, measles, mumps and chickenpox are reported to be prevalent in Traer.——Several cases of smallpox are reported from Waterloo.——There are now 8 smallpox patients in the Isolation Hospital, Sioux City.——Two cases of smallpox developed March 3, in a hotel in Cedar Rapids.

LOUISIANA.

Sanitary Inspection.—The New Orleans health board has sent out 27 crews, each composed of three members, to locate all unscreened cisterns and all low lying and badly drained places in the city.

Disposition of Fever Fund.—The balance of the fund subscribed to fight yellow fever in 1905, amounting to about $20,000, has been disposed of by the New Orleans Health Association by donating two-thirds of the sum to the Antituberculosis League and one-third to the Eye, Ear, Nose and Throat Hospital.

Society Reorganizes.—The Terre Bonne Parish Medical Society has been reorganized at Houma with the following officers: President, Dr. Joseph B. Duval, Houma; vice-presidents, Drs. Adolph J. Delcourt, Houma, and R. M. Calmore, Shriever; secretary, Dr. Adolph J. Delcourt, Jr., Houma, and treasurer, Dr. Leon J. Menville, Houma.

Personal.—Dr. L. O. Clark, Lafayette, has been appointed president of the Lafayette Parish board of health, vice Dr. George R. Delaureal, Broussard, resigned.——Dr. Francis W. Brian, Alexandria, is said to have been fined in the city court $15, for failure to report a case of communicable disease, February 26.——Dr. Robert C. Kemp has moved from Echo to Baton Rouge.

Colored Medical Association Meets.—The Louisiana Medical, Dental and Pharmaceutical Association held its annual meeting in New Orleans, March 4, 5 and 6. Dr. Isaac W. Young, Alexandria, was elected president; F. M. Nelson, secretary; Dr. A. J. Aubrey, Jesuit Bend, corresponding secretary, and Dr. Leonidas T. Burbridge, New Orleans, treasurer. It was decided to establish a medical journal for the association with the following staff: Editor, Dr. C. J. Lopez, Lake Providence; associate editor, Dr. Leonidas T. Burbridge, New Orleans, and manager, R. Fredericks. The association adjourned to meet in Alexandria.

MARYLAND.

Hospital Note.—The new north wing for the Frederick City Hospital has been given by Mrs. Margaret E. S. Wood, at a cost of $10,000, as a memorial to her husband.

Tuberculosis.—By a vote of 13 to 4 the Towson Improvement Association, on March 9, passed a resolution protesting

against the erection at the Eudowood Sanatorium of the proposed new hospital for advanced cases of tuberculosis.——The traveling exhibit of the Maryland Association for the Prevention and Relief of Tuberculosis was displayed at Highlandtown last week and is at Towson this week.

Personal.—Dr. John A. Sperry has been elected chief of the medical staff of the Church Home and Infirmary, Baltimore. ——Dr. Archibald C. Harrison, Baltimore, has been elected chief surgeon of the United Railways Company, vice Dr. Isaac R. Trimble, deceased.——Dr. Charles L. Mattfeldt has been elected president of the Catonsville Volunteer Hose Company. ——Dr. William D. Corse, Gardenville, was thrown from his carriage in a collision with a street car, and severely injured.—— Dr. Arthur S. Lovenhart of Johns Hopkins University has been appointed to the chair of pharmacology and toxicology in the College of Medicine of the University of Wisconsin.

MASSACHUSETTS.

Skin Disease Prevalent.—Impetigo contagiosum is reported to be prevalent in West Springfield high school and the local board of health has started an investigation.

Cocain Peddler Sentenced.—Ernest G. Kelly of Cambridge, Boston, who is said to have been a persistent offender against the law forbidding the peddling of cocain, is said to have been convicted on March 1 and fined $100 on each of three counts. The cocain was an ingredient of an alleged remedy for catarrh, known as the "Standard Catarrh Cure," which was sold about the streets of Lynn by the defendant.

Personal.—Dr. Frederick F. Andrews has been elected a member of the board of health of Revere.——Dr. and Mrs. Arthur C. Nason, Newburyport, sail for Europe next month. ——Dr. and Mrs. Ernest H. Noyes, Newburyport, expect to sail for Europe in June.——Dr. Walter Channing has been elected a member of the school board of Brookline.——Dr. John A. Leitch has been elected town physician of Andover.

MINNESOTA.

Scarlet Fever.—On account of the presence of scarlet fever at Randall the public school has been closed, and public gatherings have been forbidden until further notice.

Medical Schools Merge.—The Medical Department of Hamline University has been merged with that of the University of Minnesota, and after the present college year the Hamline medical department will be closed.

Fire in State Hospital.—A fire February 23, in the tunnel which connects the detached ward of St. Peter's State Hospital with the main structure, caused great alarm to the patients, 300 of whom were removed from the ward without injury. The building was not much damaged.

Medical Society in New Quarters.—The new rooms of the Hennepin County Medical Society in the Donaldson building, Seventh Street and Nicollet Avenue, were formally opened and turned over to the organization, March 2. The new quarters of the society consist of a library and lecture room, with committee, cloak and reception rooms.

MISSOURI.

State Medical Society Meeting.—The Missouri State Medical Association will hold its annual meeting in Springfield, May 19 to 21.

Communicable Diseases.—A few cases of smallpox are reported south of Bethany.——Cerebrospinal meningitis is reported to be epidemic in and around Princeton, where 16 fatal cases have occurred.

Medical Department Transferred.—The Medical Department of the University of Missouri will henceforth be located in St. Louis, the Barnes Medical College property, valued at $350,000, having been transferred to the university authorities.

Consumptive Home Accepted.—The board of trustees of the Missouri State Tuberculosis Sanatorium on March 3 accepted the Eaton Villa Home for Consumptives, near Aurora. The building when completed will cost nearly $23,000 and will accommodate 26 patients.

St. Louis.

Affiliation of Libraries.—The council of St. Louis Academy of Sciences has taken the initiative in an effort to render the libraries of the various scientific organizations of the city accessible to members of all. It is believed that both the Medical Library Association and the medical societies will be favorable to the plan.

Medical Society Quarters.—The St. Louis Medical Society of Missouri has recently added two rooms to its auditorium, 3523 Pine Street, making it adequate for the needs of the organization for many years to come. The larger room is furnished for the council and other business meetings; the smaller affords quarters for the secretary and stenographer, and the medical information bureau.

Personal.—Dr. Louis M. Warfield has been appointed a member of the committee on prizes for the International Congress on Tuberculosis.——Dr. John W. Marchildon will leave for Berlin in a few weeks.——Dr. Carl Barck is recovering from a serious infection of the left hand.——Dr. H. Wheeler Bond, health commissioner, has returned from a vacation trip to the south.

Forbidden to Display Sign.—Dr. Henry Schwartz is said to have been forbidden on March 3 by the St. Louis Court of Appeals to display his sign at 440 North Newstead Avenue, or to practice his profession there excepting in emergency cases. Neighbors of Dr. Schwartz applied for an injunction to prevent him from practicing at his home, on the ground that the restrictions in that part of the city forbade the conducting of business of any kind.

NEW YORK.

Hospital Notes.—The keys of the new City Hospital, Lockport, were turned over to the city authorities February 25. ——The Municipal Tuberculosis Clinic and Dispensary of Rochester has been located on East Fayette Street, where a two-story building has been leased for the purpose. Dr. H. Burton Doust, who is to have charge of the clinic, reports that it will be opened to the public some time this month.

Personal.—Dr. Veranus A. Moore, Ithaca, has been appointed director of the New York State Veterinary College, vice Dr. James Law.——Dr. Willard De F. Preston has been appointed town physician of Attica.——The medical staff of the Cortland Hospital has elected the following officers: President, Dr. Henry T. Dana; vice-president, Dr. James Walsh, and secretary, Dr. S. J. Sornberger.——Dr. Dwight F. Johnson has succeeded Dr. William H. Jessup as health officer of Newark.

Communicable Diseases.—The Vine Street public school, Lockport, has been closed on account of an epidemic of diphtheria in the eastern part of the city.——A school teacher in the Stuck district, near Waterloo, is reported to be ill with smallpox.——Several cases of smallpox are reported north of Waterloo.——The public school at Forks Station, near Buffalo, has been closed on account of scarlet fever.——The public school in West Seneca, near Buffalo, was closed March 5 on account of the prevalence of scarlet fever.——There are said to be more than 200 cases of measles in Binghamton.

Society Meeting.—At the annual meeting of the Woman's Medical Society of New York State, held in Rochester, March 11, the following officers were elected: Honorary president, Dr. Elizabeth Blackwell, Hastings, Eng.; president, Dr. Sarah R. A. Dolley, Rochester; vice-presidents, Drs. Eliza M. Mosher, Brooklyn; Mary Theresa Greene, Castile, and Helene J. C. Kuhlman, Buffalo; secretary, Dr. Eveline B. Ballintine, Rochester; treasurer, Dr. Kathleen L. Buck, Rochester; and councilors, Drs. Mary H. Colton, New York City; Inez Bentley, Kings Park; Mary Gage-Day, Kingston; Florence A. Sherman, Watertown; Harriet M. Doane, Fulton; Sophy Ellen Page, Ithaca; Evelyn Baldwin, Rochester, and Mary I. Denton, Buffalo.

New York City.

Personal.—On February 29 a dinner was given by the Brooklyn Medical Association to Dr. George A. Ostrander in honor of the fiftieth year of his practice in the borough.

Censures Officials.—The coroner's jury has censured the officials of Bellevue Hospital for transferring a patient to the hospital on Blackwell's Island when she was dying of consumption.

Anesthetists Meet.—At the spring meeting of the Long Island Society of Anesthetists, held in Brooklyn, March 14, the European methods of anesthesia was the subject of discussion. Dr. Mary P. S. Rupert, Philadelphia, presented the chief paper of the evening.

Memorial Services.—The Medical Society of Kings County on March 8 held memorial services for its members who had died during the last two years. The Rev. S. Parks Cadman delivered the principal address, and an address was also made by Dr. Onslow A. Gordon, president of the society.

Resolutions Regarding Roosa.—At a meeting of the Alumni Association of the New York Postgraduate Hospital, held March 10, resolutions were adopted laudatory of the late Dr. Daniel B. St. John Roosa, as the founder of systematic postgraduate instruction; offering to his family the sympathy not

of the society but of those who loved, admired and reverenced him.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended March 7, 1,465 cases of measles, with 26 deaths; 901 cases of scarlet fever, with 56 deaths; 426 cases of tuberculosis, with 200 deaths; 379 cases of diphtheria, with 48 deaths; 26 cases of typhoid fever, with 7 deaths; 10 cases of cerebrospinal meningitis, with 12 deaths; 9 cases of whooping cough, with one death, and 215 cases of varicella, making a total of 3,432 cases, with 350 deaths.

The Problems of Congestion of Population.—A conference on the problems of congestion of population in connection with an illustrative exhibit was held in the Museum of Natural History on March 9, 10 and 11. The exhibit will be open to visitors until March 23. Among the topics discussed were: "The Housing Problem," by Robert W. DeForest; "Moral Standards and Family Life in the Tenements," by Felix Adler; "Congestion and Preventable Diseases," by Dr. Abraham Jacobi; Prof. L. H. Bailey of Cornell University, and C. W. Larmon of the State Department of Agriculture set forth the advantages of farm and country life. Many requests have been received from other cities that the exhibit be sent to them as an educational factor.

OHIO.

Fire in Hospital.—Fire in the Piqua Memorial Hospital March 3 necessitated the removal of the patients from the hospital. The fire was confined to the basement.

Boy Phenomenon Sent to Jail.—R. E. Brake, who is known throughout Ohio as the "boy phenomenon," is said to have been sentenced on March 11 at Lisbon to pay a fine of $25 for contempt of court, and in default was committed to jail.

Academy Election.—The Cincinnati Academy of Medicine, at its annual meeting March 2, elected the following officers: Dr. William E. Gillespie, president; Drs. Rufus B. Hall and Stephen E. Cone, vice-presidents; Dr. Mary K. Isham, secretary, and Dr. Alexander G. Drury, treasurer.

Local Option Law Violators.—Dr. Thomas N. Dean, Hicksville, against whom an indictment was recently returned for issuing prescriptions for whisky, withdrew his appeal to quash the indictment and entered a plea of guilty to issuing prescriptions for whisky and is said to have been fined $250 and costs.——Dr. George W. Mehl, Ashland, charged with prescribing whisky, is said to have pleaded guilty recently and was fined $250 and costs.

Communicable Diseases.—Smallpox is reported to be epidemic at Holloway.——There are now three smallpox patients at the Isolation Hospital, Toledo.——There are reported to be 25 smallpox patients in Vanceburg and its vicinity.——A case of cerebrospinal meningitis was reported at Cleveland, March 10.——Two deaths from cerebrospinal meningitis were reported March 10 in Columbus.——Germantown is at present threatened with an epidemic of scarlet fever.

Hospital Notes.—Articles of incorporation of Grant Hospital, Columbus, were filed February 24. It is proposed to erect a six-story brick hospital, to cost $150,000.——Plans are being prepared for the new hospital at Massillon, to be three stories in height, of brick and stone, and to cost $50,000, the expense being borne by J. F. Pocock, who will present the institution to the city.——Ground was broken March 10 at the Franklin County Infirmary, Columbus, for the building for the County Tuberculosis Hospital. Mrs. Samuel L. Black, president of the Columbus Society for the Cure and Prevention of Tuberculosis, turned the first spadeful of earth.——Youngstown Hospital celebrated the twenty-fifth anniversary of its foundation March 7.

Personal.—Dr. John J. Kinney, Wooster, was operated on February 21 for appendicitis at the Charity Hospital, Cleveland.——Dr. Robert H. Grube has been elected vice-chairman, and Dr. Lawrence H. Brundage, health officer of Xenia.——Dr. William H. Taylor, Cincinnati, was tendered a dinner at the Queen City Club March 2, in honor of his fiftieth year in the practice of medicine in Cincinnati.——Dr. George D. Gohn, Dayton, has been appointed jail physician, vice Dr. Alvin L. Light.——Dr. Myron S. Clark has been elected vice-president of the board of health, and Dr. Harry E. Welch, health officer, of Youngstown.——Dr. James H. Fisher, Malinta, while returning from a call March 3, fell on the ice and broke his leg at the ankle.——Drs. A. C. McNutt and Jerome Bland have been elected honorary life members of the Crawford County Medical Society.——Dr. Henry G. Gibson has been elected health officer of Glouster.

PENNSYLVANIA.

Need City Bacteriologist.—At a meeting of the Physicians' Association of Chester the adverse action of the city councils, in defeating the proposition to appoint a city bacteriologist was considered, and every member of the association was urged to attend the next meeting of councils and explain the necessity of such an official.

Smallpox Spread by Mail.—Eight more cases of smallpox in Dauphin County were reported to State Health Commissioner Dixon March 14. They are the result of the infection spread through the mails several months ago, when a postal clerk who had smallpox handled mail distributed to various parts of the state.

County Society Meeting.—The Northumberland County Medical Society held a meeting March 6, at which Dr. John B. McAlister presented a paper on the proposed one board bill, wherein it was shown that, instead of an examining board for each school of medicine, there should be but one standard for the licensing of a person to practice medicine. The society was notified that three persons were illegally practicing medicine in the county, two without a state certificate and one without either state certificate or a diploma. The secretary was instructed to ascertain if these facts were true from the secretary of the state medical council, and, if so, to notify these individuals that unless they properly qualify they will be dealt with according to law.

Philadelphia.

New Laboratory for College.—The new laboratory for the analysis of food and drug products, being completed for the College of Pharmacy, will be formally opened the beginning of April. The cost of the building will be $40,000 and it will contain facilities for all kinds of qualitative analyses, as well as an equipment for the education of food and drug chemists.

Elections.—At the annual election of the Northern Medical Association of Philadelphia the following officers were selected: President, Dr. Herman A. Brav; vice-president, Dr. Ralph E. Shrom; treasurer, Dr. John W. Millick; secretary, Dr. William R. Bready, Jr.; librarian, Dr. Robert J. Hess; recording secretary, Dr. Thomas R. Currie, and censor, Dr. David Riesman.——The officers of the Section on General Medicine of the College of Physicians for 1908 are: Chairman, Dr. J. Alison Scott; clerk, Dr. George W. Norris; executive committee, Drs. Samuel McC. Hamill, Aloysius O. J. Kelly and George W. Norris.

Building New College.—Work has been started on the new building for the College of Physicians and it is expected that it will be completed late in the fall. It will be a two-story stone structure, 120x180 feet. The first floor of the building will be divided into offices and a large room for the display of anatomic specimens owned by the college. Nearly all the second floor will be given up to library and lecture hall. Space will be made for the large number of valuable works of reference. Andrew Carnegie gave $100,000 to the college, thus rendering it able to begin building at once. The cost of the new home will be about $300,000.

Doctors and Druggists Meet.—A joint meeting of pharmacists and physicians was held at the College of Physicians March 11, for the purpose of remedying abuses in the sale of nostrums and proprietary medicines. Dr. Albert M. Eaton presided. Dr. Joseph P. Remington, dean of the College of Pharmacy, contended that if physicians would make a united stand the sale of secret preparations could be stopped. It was shown that there was greatly increased growth in the proprietary medicine industry, increasing from 1,127 establishments in 1890, having a working capital of $18,600,000 and producing $32,000,000 worth of preparations, to 2,245 establishments in 1905, with $46,000,00 capital and producing $75,000,000 worth of nostrums from material costing $21,000,000.

Health Report.—The total number of deaths reported for the week ended March 14 was 527, a decrease of 44 from the previous week and a decrease of 61 from the corresponding week of 1907. The principal causes of death were: Typhoid fever, 17; measles, 5; scarlet fever, 6; diphtheria, 5; consumption, 71; cancer, 21; exophthalmic goiter, 2; apoplexy, 6; paralysis, 7; heart disease, 55; acute respiratory diseases, 90; gastritis, 6; enteritis, 13; cirrhosis of the liver, 5; acute nephritis, 8; Bright's disease, 42; puerperal septicemia, 5; congenital malformation, 6; premature birth, 12; congenital debility, 9; old age, 5; suicide, 5; accidents, 20, and marasmus, 2. There were 255 cases of contagious diseases reported, with 28 deaths, compared with 244 cases and 30 deaths reported in the preceding week.

Physicians War on Malpractitioners.—Because of the arrest of several physicians and the evidence obtained against them by the police, the county medical society has conducted investigations from which it has learned of the existence in this city of a class of physicians of good repute who are guilty of malpractice. Physicians found guilty will be forced to leave the city or submit to prosecution. There were three cases of physicians charged with malpractice taken up by the coroner March 9. Dr. Albert A. Appel, charged with having performed an illegal operation on a woman who died in the Jewish Hospital on March 5, was held without bail to await the action of the grand jury. He is said to have served a term of two years in prison for an offense of a similar nature. Dr. Charles Johnson was discharged for lack of evidence, as the statement made by the girl was while she was under the influence of morphin. Dr. Malcolm Henry, charged by a colored girl with malpractice, was arrested March 7, and held in $2,000 bail.

WASHINGTON.

Society Meeting.—At the semi-annual meeting of the Kings County Medical Society, held in Seattle, February 17, two new clinical cases were reported by Dr. J. C. Moore. The paper of the evening was read by Dr. Park W. Willis on "The Treatment of Asthma with Diphtheria Antitoxin."——The first annual meeting of the Washington Association for the Relief and Prevention of Tuberculosis was held in Seattle, February 19, when addresses were given by Dr. Pottenger, Monrovia, Cal.; Dr. Edward A. Pierce, Portland, Ore.; Dr. Charles J. Fagan, Victoria, B. C.; Dr. Conrad M. Suttner, Walla Walla, and Dr. Robert C. Coffey, Portland, Ore. Governor Mead and others also delivered addresses.——The meeting of the Washington State Association has been set for September 1, 2 and 3, at Walla Walla.

GENERAL.

Optical Firms Amalgamate.—The Bausch and Lomb Optical Company, the Bausch, Lomb, Saegmuller Company of Rochester, N. Y., and the Carl Zeiss Optical Works of Jena, Germany, have united their interests with the expressed purpose of carrying to the highest possible development the production of optical instruments.

Indignant Over Quarantine Order.—The authorities of Havana are said to be surprised and indignant over the announcement of the Public Health and Marine-Hospital Service that quarantine against Cuba will be declared April 1, an unusually early date. The local health authorities consider the enforcement of the regulations entirely unjustifiable, as the last known case of yellow fever was discharged February 28.

Personal.—Dr. William M. Chambers, consular agent at Puebla, Mexico, has resigned and removed to Texas.——Dr. P. M. Monroe has been unanimously reappointed surgeon of the American Hospital, City of Mexico, for the ensuing year. ——Dr. William W. Mangum, formerly of Eufaula, Ala., has moved to the City of Mexico.——Dr. E. W. White, physician of the Mexican Central Railway at Chihuahua, Mexico, accidentally shot himself recently while cleaning his revolver.——Dr. Carlos J. Finlay, chief of the department of health and sanitation, Havana, was presented by Governor Magoon with the Mary Kingsley medal in recognition of his services in developing the mosquito theory of yellow fever.

Mexican Notes.—The governing board of the medical institute which was formerly under the Department of Fomento, has been reappointed by the Department of Public Instruction. ——The National Academy of Medicine announces that its next meeting will be devoted to the report of the special committee, appointed to study the necessary steps to be taken to prevent the propagation of venereal diseases among the young. ——With the support of the state government and of the Compania Industrial de Orizaba, the local authorities will build a hospital at Orizaba to accommodate 200 patients.——Dr. Eduardo Liceago, president of the Superior Board of Health of the City of Mexico, pronounces unfounded the reports that cholera has broken out at Acapulco.

Society Meetings.—The American Medico-Psychological Association will hold its meeting in Cincinnati, May 12 to 15.—— The International Medical Association held its annual session January 23 to 25 in Monterey, Mexico, and elected Dr. Jamison, Torreon, president; Dr. Mary L. Burnham, Monterey, vice-president; and Dr. J. S. Steele, Monterey, secretary. Tampico was chosen as the place of meeting for 1909.——The surgeons of the Lackawanna Railroad Company met at Scranton, Pa., February 3, and organized the Lackawanna Railway Surgeons' Association, with the following officers: President, Dr. Jonathan M. Wainwright, Scranton; vice-presidents, Drs. Henry A. Argue, Corning, N. Y., and Henry T. Dana, Cortland, N. Y., and secretary-treasurer, Dr. Walter Steadman, Hoboken, N. J.

Prevention of Unnecessary Blindness.—In a recent issue of "The Outlook for the Blind," a quarterly record published by the Massachusetts Association for Promoting the Interests of the Blind, appears a paper on "The Prevention of Unnecessary Blindness a Public Duty," by Dr. F. Park Lewis, chairman of the New York Commission for the Blind, in which, after dilating on the prevalence of the blindness due to ophthalmia neonatorum, he urges the adoption of the plan approved by the American Medical Association providing, first, for the enactment of laws, supervising the control and licensure of midwives by the boards of health; requiring that they be examined and registered in each county, and that they be required to report each case of the disease occurring in their practice under penalty of forfeiture of license and fine; second, the distribution by health boards of circulars of advice to midwives and mothers, giving instruction as to the dangers, methods of infection, and prophylaxis of the disease; third, the preparation and gratuitous distribution by health boards of the chosen prophylactic; fourth, to obtain at stated periods from midwives and obstetricians a report of the number of cases of ophthalmia neonatorum, which have occurred in their practice during this period, together with a statement as to whether or not a prophylactic was used in each case.

International Congress on Tuberculosis.—The central committee of the congress has announced the offer of prizes of $1,000, besides gold and silver medals, each prize to be accompanied by diplomas or certificates of award, for each of the following: 1. For the best evidence of effective work in the prevention or relief of tuberculosis by any voluntary association since the last International Congress, in 1905. 2. For the best exhibit of an existing sanatorium for the treatment of curable cases of tuberculosis among the working classes. 3. For the best exhibit of a furnished house, for a family or group of families of the working class, designed in the interest of the crusade against tuberculosis. 4. For the best exhibit of a dispensary or kindred institution for the treatment of the tuberculous poor. 5. For the best exhibit of a hospital for the treatment of advanced pulmonary tuberculosis. Other prizes offered are following: 1. The Hodgkins Fund Prize of $1,500 is offered by the Smithsonian Institution for the best treatise that may be submitted on "The Relation of Atmospheric Air to Tuberculosis." 2. A gold medal and two silver medals for the best exhibits sent in by any states of the United States, illustrating effective organization for the restriction of tuberculosis. 3. A gold medal and two silver medals for the best exhibits sent in by any state or country (the United States excluded), illustrating effective organization for the restriction of tuberculosis. 4. A gold medal and two silver medals for each of the following exhibits: (A) For the best contribution to the pathologic exhibit. (B) For the best exhibit of laws and ordinances in force June 1, 1908, for the prevention of tuberculosis by any state of the United States. (C) For the best exhibit of laws and ordinances in force June 1, 1908, for the prevention of tuoerculosis by any state or country (the United States excluded). (D) For the best exhibit of laws and ordinances in force June 1, 1908, for the prevention of tuberculosis by any municipality in the world. (E) For the society engaged in the crusade against tuberculosis having the largest membership in relation to population. (F) For the plans which have been proved best for raising money for the crusade against tuberculosis. (G) For the best exhibit of a passenger railway car in the interest of the crusade against tuberculosis. (H) For the best plans for employment of arrested cases of tuberculosis. 5. Prizes of two gold medals and three silver medals for the best exhibit of a workshop or factory in the interest of the crusade against tuberculosis. 6. Prizes for educational leaflets: A prize of $100, a gold medal, and two silver medals in each class, for the best educational leaflet submitted in each of the seven classes defined below: (A) For adults generally (not to exceed 1,000 words). (B) For teachers (not to exceed 2,000 words). (C) For mothers (not to exceed 1,000 words). (D) For indoor workers (not to exceed 1,000 words). (E) For dairy farmers (not to exceed 1,000 words). (F) For school children in grammar school grades (not to exceed 500 words). (G) Pictorial booklet for school children in primary grades and for the nursery. Dr. Charles J. Hatfield, Philadelphia, is the chairman of the committee, and Dr. Thomas G. Ashton, Philadelphia, is the secretary.

CANADA.

Hospital News.—A new hospital was opened at Wetaskiwin, Alberta, March 2. There are 6 patients in the hospital.—— Moose Jaw Hospital, Saskatchewan, has been benefited by a ball to the extent of $500. The city council has been asked

to assume a debt of $7,000 against the hospital. The medical staff was refused power to elect its own members.

New British Columbia Medical Council.—For the next three years the following will constitute the medical board of the College of Physicians and Surgeons of British Columbia: President, Dr. O. M. Jones, Victoria; secretary, Dr. C. J. Fagan, Victoria; and Drs. R. E. McKechnie, Proctor, and S. J. Tunstall, Vancouver; Dr. R. Eden Walker, New Westminster; Dr. Sutherland, Revelstoke.

FOREIGN.

Influenza Epidemic in Scotland.—Influenza has been epidemic in Edinburgh, but fewer cases are now being reported. Many of the nurses of the Royal Infirmary were laid up, and several of the resident physicians and surgeons were off duty from the same cause. Curiously enough, says the *British Medical Journal*, of all large institutions in the city the jail suffered least.

Suit for Possession of Renal Calculi.—A Munich specialist removed two exceptionally large kidney stones from a patient and kept them for a scientific demonstration. The patient laid claim to the stones, and the surgeon then raised his fee from $100 to $200, claiming that he had charged at first the lower amount as he had calculated on retaining the interesting kidney stones. The patient appealed to the courts, which decided in favor of the surgeon. The judge stated that the great responsibility and skill required for such an operation justified the increased fee.

School for Red Cross Helpers at Rome.—A five months' course of instruction for volunteer Red Cross helpers has been inaugurated at Rome, in charge of Colonel Parisi and Professor Postempski. The lectures are to be delivered by Professors Bisso, Memmo, Piva and Pasca, and large numbers of students have registered, including a number of society women, some of them belonging to the foreign colony. The volunteer helpers who have completed the course are morally bound to respond to the summons of the Italian Red Cross at any time when circumstances demand the mobilization of the forces.

Second Congress of French Practitioners.—The "vigilance committee" appointed by the first "free lance" congress issues a summons to a second congress to be held at Lille in June. The questions to be discussed are "Reform in the Medical Courses" and "Free Choice of a Physician," both referring to conditions peculiar to Europe or France alone. The regulations of the congress provide that medical societies and associations can each send one or more delegates to the congress and that the delegation is entitled to as many votes as there are members in the association which it represents. These congresses are exclusively for discussion of economic and material questions and no strictly scientific papers will be received. The aim is to break away from the ruts of tradition and usage which interfere in France with progress in medical education and other matters. The secretary is M. Aubert, rue de Thiers 5, Lille, France.

The Medical Entente Cordiale in Europe.—In 1904 a party of 155 French physicians visited London, and in 1905, 160 English physicians visited Paris in a body, to return the call of their French confrères. Soon after this a society was organized to promote friendly relations between the physicians of the two countries, the "Entente Cordiale Médicale," which now numbers 600 members. Fifty-five leading French and English professors belonging to the association have accepted an invitation to lecture in the others' country and, as mentioned March 7 in these columns, Sir Dyce Duckworth opened the series at Paris with an address, delivered in French, on the "Diatheses." He was given an actual ovation by the French profession. These "Entente Cordiale" lectures are to be delivered at the various university centers of the two countries. The *Progrès méd.*, February 22, gives the list of the lecturers who have thus promised their cooperation.

Medical Secrecy and Contract Practice.—The French courts recently condemned a physician to a fine of $100 and costs for violation of professional secrecy under the following circumstances: He was engaged as physician for an industrial corporation which gave medical and financial aid to its disabled workmen when the disability did not result from epidemic disease or misconduct. He was called to a certain sick workman and discovered signs of recent syphilitic infection. He informed the patient of his infection and also the patient's wife, who was present, and told her to refrain from intercourse with her husband to avoid contagion. At the same time he reported to the firm that as the workman had a contagious disease he could not resume his work for some time. He did not specify the name of the disease in his report. The patient then applied to a specialist, who wrote to the firm, stating that the workman did not have syphilis but only psoriasis. His employers refused to hire him again, basing their refusal on the statement of their own physician, and the workman then brought suit against the latter for violation of professional secrecy. Three medical experts testified in the case that the presence of syphilis was beyond question, that its existence had been revealed to others by the workman himself and his wife, and not by the firm's physician, and consequently that there was no case against him. The court, however, declared that no contract releases an individual from compliance with the law, and that the physician must comply with the regulations for professional secrecy unless voluntarily released by the patient himself, informed as to the facts. The plaintiff had lost his sick benefit and his position in the factory and had suffered from his wife's knowledge of his infection, and he claimed large damages. On account of the physician having acted in good faith and other extenuating circumstances, the court reduced the damages to $100 and costs. The full text of the decision is given in the *Semaine méd.*, February 26.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Feb. 22, 1908.

A Physician Receives $2,500 Damages for Libel in Connection with a Postmortem Examination.

A physician has received $2,500 damages for a libel made under unusual circumstances. Last year a man named Brinkley was found guilty of murder by poisoning with strychnin and was executed. When the police inquired into his antecedents they found that toward the end of 1906 a woman living in the same house had a fit and that Mr. M. J. Williams, who had been called in to attend her, had found her dead on his arrival. He was asked by Brinkley to certify as to the cause of death, but refused and made a postmortem examination under the coroner's order. His evidence was that the deceased died from apoplexy. No question of foul play arose and the question of poisoning was not investigated. When Brinkley was charged with poisoning it was thought desirable to look for evidence of crime in the former case. By order of the home secretary the woman's body was exhumed and was examined by Sir Thomas Stevenson. No trace of poison was discovered. The organs were found replaced in the usual manner in the cavity of the chest, except the brain, which evidently had disintegrated during the interval since the first postmortem. In a newspaper—the *Star*—the version given of the facts was erroneous. It was stated that no poison could be found and that some of the parts which it was desired to examine were missing. The comment was added: "This circumstance does not reflect on any person now concerned in the case, but may be a consequence of the first postmortem examination made at the time of death." This serious imputation on the physician compelled him to bring an action to vindicate his character. The defense was made that the words were not capable of the defamatory meaning assigned to them and also that they were true. This latter plea was aggravated by placing on the record of "particulars of justification" a list of portions of the body alleged to be missing in consequence of the plaintiff's conduct. The physician gave evidence that his practice had been injured by the publication of the libel. The case was settled by arrangement between the parties, the *Star* agreeing to pay $2,500 damages. The result is all the greater satisfaction to physicians, as this journal has distinguished itself as a persistent enemy and maligner of the profession on every possible occasion and is a constant champion of the anti-vaccinationists and anti-vivisectionists.

The Royal College of Surgeons.

Mr. Arthur Keith, lecturer on anatomy at the London Hospital, has been appointed conservator of the museum of the Royal College of Surgeons, a position rendered vacant by the death of Professor Stewart. The appointment was not unexpected in medical circles, for Mr. Keith by his original researches into those questions which lie at the boundaries of anatomy and physiology, and which have, therefore, been neglected by the students of both sciences, has made a unique reputation. A circular has been sent to the fellows and members of the college asking their opinion as to whether or not women should be admitted to examination for the diplomas of the college. A small committee has been appointed with the object of keeping the council informed as to what is being done from time to time regarding the medical inspection of school children, and the arrangements for teaching elementary hygiene in training colleges and schools.

Therapeutics

[It is the purpose of this department to outline an up-to-date management of disease, to suggest scientific treatment for diseased conditions, and to present prescriptions that are simple, useful and palatable. Prescriptions are written in both the metric and apothecaries' systems, but the amounts of the ingredients are NOT exact translations of one system into the other, but quantities convenient for pharmacist and physician. It should be understood that solids are weighed in grams or fractions of grams, while liquids are measured in cubic centimeters; that a teaspoon holds five cubic centimeters, i. e., more than a fluid dram, hence a 100 cubic centimeter preparation will contain twenty doses.]

Alcoholic Cerebral Edema (Wet-Brain).

Dr. Charles K. Stillman, New York (*New York Medical Journal*, Jan. 25, 1908), discusses this condition. He believes that the stupor following alcoholic delirium is due to cerebral edema, but admits that many serous effusions are found in the meninges on the postmortem table in patients who have shown no cerebral symptoms during their illness. The wet-brain caused by alcohol seems to be a "transudate from the piarachnoid and occasionally from the small blood vessels penetrating the brain substance." He finds the stupor due to alcohol almost invariably preceded by delirium. From a study of the alcoholic patients of Bellevue Hospital, during the year from Sept. 1, 1905, to Sept. 1, 1906, who have had alcoholic wet-brain or alcoholic stupor, he has found the mortality to be as high as 81 per cent.

Stillman speaks of having seen many instances of transitory wet-brain in pneumonia patients, the symptoms sometimes being so short-lived as to have escaped notice.

It certainly is not uncommon to see, on the one hand, cerebral excitation from the medicinal overuse of alcohol in acute diseases, as pneumonia or typhoid fever, and also, on the other hand, symptoms of wet-brain from its misuse in these diseases.

While there is no rule as to the time of onset of stupor after delirium tremens or in pneumonia complicated with delirium tremens, Stillman finds the symptoms of wet-brain manifest themselves about the third or fourth day. The early symptoms of this condition are "restlessness, marked altered facial expression, and gray pallor." During the coholic excitation the pupils are likely to be contracted, and may be even contracted to a pin point. As the cerebral transudate occurs the pupils dilate and generally remain so, although they will usually react to light, though sluggishly. The pulse is feeble, may be rapid or may be rather slow, and shows variations from time to time. The temperature during this alcoholic depression is low and there may be muttering and often a picking at the bedclothes. The condition is more likely to be a stupor than a coma.

Stillman would head off this alcoholic wet-brain by forced feeding. He gives enormous amounts of food, including eggs, eggnog and broths, together with powerful stimulation, when the pulse flags and the vital processes get low. He says that the patients do not react to normal stimulating doses, and it is surprising how much stimulation they can take care of with apparent benefit. He advises:

℞.	gm. or c.c.		
Strychninæ sulphatis	.01		gr. 1/6
Camphoræ	1	or	gr. xv
Spiritus frumenti .....ad	100		fl℥iii

M. et Sig.: A tablespoonful every three hours, if needed.

He also finds the following useful:

℞.	gm.		
Caffeinæ citratæ	6	or	3iss

Fac capsulas 20 (dry).

Sig.: One capsule every six hours.

Or:

℞.	gm.		
Caffeinæ sodio-benzoatis (N. F.).....	6	or	3iss

Fac capsulas 20 (dry).

Sig.: One capsule every six hours.

He finds that spinal puncture is of benefit for a short time if the cerebral pressure has produced stupor and that the relief from such puncture will last a day or so.

Patients with wet-brain from alcohol should probably not receive alcohol. Also, when there is any such condition of the brain, absorption from the stomach is uncertain, and of course enormous doses of any stimulant so administered may be tolerated. It should be distinctly understood that when there is severe cerebral disturbance sufficient to cause stupor or coma, the stomach for the time being becomes practically outside of the body, and it would be just as efficacious to bathe the body with the medicament as to put it into the stomach. On the other hand, if suddenly the condition of the circulation improves and the cerebral pressure is relieved, dangerous absorption from drugs in the stomach may occur. Consequently, the medicinal treatment of coma or stupor should be hypodermatic or intravenous.

For the above condition no treatment is perhaps better than the intramuscular injection of an aseptic ergot, a syringeful of the pure fluid extract or the active principle, repeated in three hours, for two or three doses, and then once in six hours, if needed.

The hypodermatic administration of strychnin sulphate or nitrate in doses of 1/30 of a grain, is a necessity for cardiac and respiratory stimulation.

The advantages of a hypodermic injection of a saturated solution of camphor in pure olive oil can not be questioned. It is a quick and efficient cardiac and cerebral stimulant, and if aseptic precautions are taken, will never produce an abscess.

Caffein, best given in the form of black coffee, and administered by the stomach, is certainly valuable in all cases of cerebral depression when there is no excitation.

Starchy Drinks.

The food value of a starchy drink during certain illnesses is considerable; also, many thin, cereal liquids are very soothing to patients with gastrointestinal disturbances. With seriously ill patients a happy arrangement of a mixed diet of some milk, some beef juice and some thin, digestible, well-cooked starch makes the most appropriate food.

The following suggestions of the way such nutritious drinks should be prepared are from "Practical Dietetics," by Alida F. Pattee:

BARLEY WATER.

Pearl barley, 1½ tablespoonfuls.

Cold water, 1 quart.

Salt, enough.

"Wash the barley, add cold water, and let it soak several hours; drain and add the fresh cold water, boiling gently over direct heat for two hours, down to one pint, adding water from time to time; salt to taste, and strain through muslin. Cream or milk may be added, or lemon juice and sugar." This makes a demulcent drink, slightly constipating.

RICE WATER.

Rice, 2 tablespoonfuls.

Cold water, 1 pint.

Boiling water or hot milk, enough.

Salt, enough.

"The carefully washed and cleaned rice should be added to the cold water and cooked an hour, or until the rice is tender. Strain, and dilute with the boiling water or hot milk to the desired consistency, and season with salt." Sugar or cinnamon may be added if desired or advisable.

OATMEAL WATER.

Oatmeal, 1 tablespoonful.
Cold water, 1 tablespoonful.
Salt, a little.
Boiling water, 1 quart.

"Mix the oatmeal and cold water, add the salt, and stir into the boiling water. Boil three hours, adding water as it boils away. Strain through a fine sieve or cheesecloth, season, and serve cold."

TOAST WATER.

Stale bread, toasted, 1 cup.
Boiling water, 1 cup.
Salt, enough.

"Dry in an oven until crisp and brown, thin, inch squares of the bread. Take a cupful of this toast broken into crumbs, add water, and let it stand one hour. Strain through cheesecloth, season, and serve hot or cold." If advisable, milk or cream and sugar may be added.

Chilblains.

The following simple combination is of benefit for chilblains, painful corns or bunions:

℞.	c.c.		
Tincturæ opii			
Tincturæ iodi	āā 15	or	āā, fl℥ss

M. et Sig.: Paint once daily over the painful part.

The following are quoted from the *New York Medical Journal*, Jan. 25, 1908:

℞.	gm. or c.c.		
Acidi tannici	10		3ii
Alcoholis	20	or	fl3iv
Phenolis	2		m. xxiv
Aquæ	ad 50		fl℥i

M. et Sig.: Paint on the chilblains night and morning.

The following ointment is also recommended for the same purpose:

℞.	gm.		
Mentholis	1		gr. xv
Methylis salicylatis	8	or	3ii
Adipis lanæ hydrosi.....	25		3vi

M. et Sig.: Apply a small quantity frequently, rubbing in until absorbed.

Pulvis Antisepticus, N. F.

SOLUBLE ANTISEPTIC POWDER.

It contains:

Phenol (carbolic acid)	.10
Eucalyptol	.10
Menthol	.10
Thymol	.10
Salicylic acid	.50
Zinc sulphate	12.50
Boric acid	86.60
	100.00

This may be used as a dry dressing wherever a dry antiseptic powder is required. Its solubility in water is about that of boric acid, viz., 4 or 5 per cent., making a saturated solution. Weaker solutions may be made, if the physician desires, for douches and washes.

This non-poisonous, antiseptic, mildly astringent National Formulary powder renders similar proprietary preparations superfluous.

Treatment of Chancroidal Bubo.—Pressure exerted over a chancroidal bubo by means of a pad of absorbent cotton and a snug spica bandage will at times abort the suppurating process and allow the infected gland to go on to restitution. Simultaneously, however, the ulcer must be kept scrupulously clean and free from all detritus. If absorption is not established within three days, the gland must be incised, curetted and drained.—N. E. Aronstam, in *Central States Medical Monitor.*

Pharmacology

THE COUNCIL ON PHARMACY AND CHEMISTRY.

List of the Physicians Elected New Members—Staff of Clinical Consultants Added.

Dr. M. L. Harris, secretary of the Board of Trustees of the American Medical Association, sends the following for publication:

At the meeting of the Board of Trustees held at Atlantic City, June, 1907, the following by-laws relating to the Council on Pharmacy and Chemistry were adopted:

> The Council on Pharmacy and Chemistry shall consist of fifteen members and shall be composed of physicians, pharmacologists, chemists and pharmacists. They shall be elected by the Board of Trustees on nomination by the Council in such manner as shall be provided by the Board of Trustees. Members shall serve five years, and the term of office shall be so arranged that the terms of three members shall terminate each year. The Board of Trustees shall designate one member of the Council to act as Chairman.
>
> The functions of this Council shall be to examine into the composition, properties, action, etc., of proprietary and other articles offered to physicians or to the public as remedial agents, and to publish such information concerning the same as may be of value to the profession or as the judgment of the Council may dictate.
>
> The Trustees shall appoint a chemist, who shall have charge of, and be chief of the chemical laboratory of the Association, and who shall be the secretary of the Council and, *ex-officio*, a member thereof. His term of office and his salary shall be determined by the Board of Trustees.

At its meeting held in Chicago, Oct. 25, 1907, provision was made for arranging the time of expiration of the services of the present members of the Council. A resolution was also adopted asking the Council to nominate to the Board of Trustees twice as many persons as there would be vacancies on the first of March, 1908, "such nominations to be conducted in such a manner that the final votes shall be secret, and shall be opened in the presence of the Board of Trustees."

In accordance with the above resolution the Council submitted to the Board of Trustees eight candidates, and from these the board elected the following: Dr. J. A. Capps, Chicago; Dr. D. L. Edsall, Philadelphia; Prof. Otto Folin, Boston, and Dr. Robert A. Hatcher, New York (re-elected).

The extra vacancy on the first of March, necessitating the election of four instead of three members, came from the fact that Professor Puckner had become the chief chemist of the Association, and in accordance with the by-law adopted last June, became the secretary of the Council and, *ex-officio*, a member thereof.

The Board of Trustees adopted a resolution directing the secretary of the board to express in writing its thanks to the retiring members.

PRESENT MEMBERS OF COUNCIL.

The following is a complete list of the Council as at present constituted, with the date of expiration of terms:

C. S. N. HALLBERG, Ph.G., M.D., Professor of Pharmacy, University of Illinois, School of Pharmacy, Chicago (March 1, 1909).
L. F. KEBLER, M.D., Ph.C., Chief of the Drug Laboratory, Department of Agriculture, Washington, D. C. (March 1, 1909).
J. O. SCHLOTTERBECK, Ph.C., Ph.D., Professor of Pharmacognosy and Botany and Dean of the School of Pharmacy, University of Michigan, Ann Arbor, Mich. (March 1, 1909).
F. G. NOVY, M.D., ScD., Professor of Bacteriology, University of Michigan, Ann Arbor, Mich. (March 1, 1910).
G. H. SIMMONS, M.D., LL.D., Editor of THE JOURNAL of the American Medical Association, Chicago (March 1, 1910).
H. W. WILEY, M.D., Ph.D., Chief of the Bureau of Chemistry, Department of Agriculture, Washington, D. C. (March 1, 1910).
TORALD SOLLMANN, M.D., Professor of Pharmacology and Materia Medica, Medical Department, Western Reserve University, Cleveland, Ohio (March 1, 1911).
M. I. WILBERT, Ph.M., Apothecary at the German Hospital, Philadelphia (March 1, 1911).
OTTO FOLIN, S. B., Ph.D., Professor of Biologic Chemistry, Harvard Medical School, Boston (March 1, 1911).

REID HUNT, M.D., Chief of the Division of Pharmacology, U. S. Public Health and Marine-Hospital Service, Washington, D. C. (March 1, 1912).
J. H. LONG, M.S., Sc.D., Professor of Chemistry, Northwestern University Medical School, Chicago (March 1, 1912).
J. STIEGLITZ, Ph.D., Professor of Chemistry, University of Chicago, Chicago (March 1, 1912).
R. A. HATCHER, Ph.G., M.D., Professor of Pharmacology, Cornell University Medical College, New York City (March 1, 1913).
J. A. CAPPS, A.M., M.D., Assistant Professor of Medicine, Rush Medical College, University of Chicago, Chicago (March 1, 1913).
DAVID L. EDSALL, A.B., M.D., Professor of Therapeutics and Pharmacology, Department of Medicine, University of Pennsylvania, Philadelphia (March 1, 1913).
W. A. PUCKNER, Ph.G., Chief of the Chemical Laboratory American Medical Association, Professor of Chemistry, University of Illinois, School of Pharmacy, Chicago, member *ex-officio*.

ASSOCIATE MEMBERS.

A. R. CUSHNY, A.M., M.D., Professor of Pharmacology, University of London, London, England.
H. THOMS, Ph.D., Director of the Pharmaceutical Institute, University of Berlin, Germany.

STAFF OF CLINICAL CONSULTANTS.

The Council on Pharmacy and Chemistry presented to the Board of Trustees, at its meeting in February, 1908, a request for the appointment of a body of clinicians to whom could be referred questions relating to therapeutics. In its communication to the board the Council stated that in the course of its work the subcommittees had frequently encountered questions a solution of which required the experience and opinions of clinical therapeutists. The suggestion of the Council was agreed to and the following were elected as the staff of clinical consultants:

LEWELLYS F. BARKER, M.D., Professor of Medicine, Medical Department of the Johns Hopkins University, Baltimore.
H. A. CHRISTIAN, M.D., Assistant Professor of Theory and Practice of Physic, Harvard Medical School, Boston.
LEROY CRUMMER, M.S., M.D., Professor of Medicine and Clinical Medicine, John A. Creighton Medical College, Physician to St. Joseph's Hospital, Omaha.
GEORGE DOCK, A.M., M.D., Sc.D., Professor of Theory and Practice of Medicine and Clinical Medicine, University of Michigan, Department of Medicine and Surgery, Ann Arbor, Mich.
GEORGE E. DE SCHWEINITZ, M.D., Professor of Ophthalmology, Department of Medicine, University of Pennsylvania, Philadelphia.
JOHN T. HALSEY, M.D., Professor of Materia Medica, Therapeutics and Clinical Medicine, Medical Department (Undergraduate) Tulane University of Louisiana, New Orleans.
C. F. HOOVER, A.B., M.D., Professor of Physical Diagnosis, Medical College, Western Reserve University, Cleveland, Ohio.
ALEXANDER LAMBERT, A.B., Ph.B., M.D., Professor of Clinical Medicine, Physician to Bellevue Hospital, Cornell University Medical College, New York City.
J. L. MILLER, M.D., Assistant Professor of Medicine, Rush Medical College, University of Chicago, Chicago.
H. C. MOFFITT, B.S., M.D., Professor of Principles and Practice of Medicine, University of California, Medical Department, San Francisco.
A. T. MCCORMACK, M.D., M.A., Secretary Kentucky State Medical Association, Bowling Green, Ky.
ALFRED STENGEL, M.D., Professor of Clinical Medicine, Department of Medicine, University of Pennsylvania, Philadelphia.
CHARLES G. STOCKTON, M.D., Professor of Principles and Practice of Medicine and Clinical Medicine, Medical Department, University of Buffalo, Buffalo.
J. A. WITHERSPOON, M.D., Professor of Practice of Medicine and Clinical Medicine, Medical Department Vanderbilt University, Nashville, Tenn.
A. S. TAUSSIG, M.D., Lecturer on Medicine, the Denver and Gross College of Medicine, Medical Department of the University of Denver, Denver.

ENTERONOL.

An Illustration of the Unreliability of Formulas Furnished by Manufacturers.

"Enteronol" is another illustration of the use of the fake formula to satisfy the demand for at least the semblance of non-secrecy. The manufacturers declare that Enteronol is the "greatest antiseptic and germicide known to science," and that it "destroys the germs of typhoid fever, acute and chronic diarrhea, dysentery, cholera infantum, cholera morbus, summer complaint, Asiatic cholera, etc., within two hours." Accompanying these wonderful statements is published the following "formula":

"Ipecac, sub. nit. bismuth, latalia rad., camphor, lupulin, caffein and rheum."

WHAT IS LATALIA RAD.?

A correspondent has written us concerning some interesting facts discovered by him. On receiving a sample of Enteronol he noted the name "latalia rad.," and sought enlightenment in regard to it in books on botany and pharmacognosy. Failing to find any mention of it, he wrote to the Enteronol Company, asking for a small sample of the drug "latalia rad.," that he might study it botanically. He enclosed $1 for the sample. He expected to receive a small piece of root or bark; but, instead, the company wrote: "On account of the cost of latalia rad., viz., $25.45 per lb., we do not send out any samples of the drug." In another letter the company stated that the plant grows in the wilds of the Himalaya mountains, and that it was not able to procure enough for its own uses. We have no doubt that this last statement is entirely correct. Further correspondence was no more satisfactory. Our correspondent remarks that his conclusions led him to terminate his correspondence with the Enteronol Company by informing it that he is firmly convinced that no such plant as "latalia rad." is in existence.

The inference is that the company has no "latalia rad." From the romantic-sounding habitat of the mysterious plant, the exceedingly high price put on it by the company, and the absence of any knowledge of it on the part of any one save the company, it is probable that no such plant exists.

RESULTS OF MICROSCOPIC EXAMINATION.

To get at some facts regarding this nostrum samples were sent to Prof. Henry Kraemer, professor of pharmacognosy in the Philadelphia College of Pharmacy, and to Prof. W. B. Day of the University of Illinois, each of whom examined Enteronol microscopically. Professor Kraemer reported:

> I have made a microscopic examination of Enteronol tablets. The mixture appears to consist of rhubarb and a starchy drug resembling zedoary, which I take to represent the "latalia rad." of the formula, although I have found no reference to the latter in the literature. There is also present a considerable amount of a water soluble crystalline substance which tastes and crystallizes like alum. I have also been able to detect a stone cell resembling that of capsicum, and a single fragment which I take to be a tracheid of ipecac. I may add that the tablets are not uniform, that is, the material does not appear to have been well mixed, and hence the tablets not only vary in microscopic appearance but also in taste.

The results of Professor Kraemer's examination are practically identical with those of Professor Day, who reports:

> I have examined microscopically the proprietary preparation known as Enteronol. I note that Enteronol is said to be "a remedy consisting of the following ingredients: Ipecac, sub. nit. bismuth, latalia rad., camphor, lupulin, caffein and rheum." On referring to well-known reference works on botany and pharmacognosy, such as the Dispensatories, the Pharmacographia, Hager's Praxis, the Treasury of Botany, Lyon's Plant Names, Hobbes' Botanical Handbook and the general index to the Proceedings of the American Pharmaceutical Association, I find no mention of a drug or plant known as "latalia" and I must conclude, therefore, that this title is a misnomer. I have seen Professor Kraemer's report, which my results confirm. Rhubarb is present in considerable quantity; there is also much of a crystalline substance which I take to be alum, and there is starchy powder which corresponds closely to zedoary. Lupulin, in substance at least, is absent, and ipecac, if present at all, is in very small amount. Since zedoary is an East Indian drug, it, possibly, is the mysterious "latalia rad." which "grows in the wilds of the Himalaya mountains." The resemblance ends here, however, for zedoary brings but 30 cents a pound wholesale, and the U. S. Dispensatory says of it, "produces no effect which can not be as well or better obtained from ginger."

This report adds strongly to the impression that "latalia rad." is simply a ruse to catch the unwary and trusting phy-

sician who has not the time to look into the botany of every new plant discovered, and who is willing to trust the presumed honesty of every manufacturer.

RESULTS OF CHEMICAL EXAMINATION.

"Latalia rad.," however, is not the only fake about the stuff, as will be noted in the following report from the chemical laboratory of the American Medical Association on the analysis of Enteronol:

> Enteronol as examined by us was in the form of compressed tablets varying, in different boxes, from a light to a dark brown color and also varying considerably in weight. The tablets have the odor and bitter taste of rhubarb. Rubbed up in water, they impart a yellow color and their characteristic odor to the solution. Since the advertising matter states that Enteronol contains caffein and bismuth subnitrate, tests were made to determine whether it did or not; carefully conducted experiments, repeatedly carried out, failed to disclose even a trace of either drug. As Professors Kraemer and Day suggested the possible presence of alum, tests were made to substantiate this further. The aqueous solution of the tablets is acid in reaction and responds to tests for aluminum, potassium and sulphates, a combination which points strongly to the presence of potash alum. Quantitative estimations were made to determine if the constituents were present in the proper proportions to form alum. On ignition the Enteronol tablets left a residue of 7.31 per cent. of ash which, on subsequent analysis, showed the presence of 2.76 per cent. aluminum oxid corresponding to a content of 25.65 per cent. of crystallized potash alum in the tablets. Determinations of sulphates in every case gave results which showed that there was present sufficient sulphate ions to correspond to the quantity of alum demanded by the aluminum content.
>
> The chemical analysis also confirmed the observations of Professor Kraemer in regard to the lack of homogeneity of the tablets. They vary in size, color and taste, all of which facts point to a poorly mixed preparation. Aside from the qualitative observations the quantitative estimations showed that the composition of the tablets varies considerably, for in the analysis of eight samples the aluminum oxid content varied from 2.05 per cent. to 3.00 per cent., corresponding to a variation in the alum content of from 19.50 per cent. to 27.95 per cent. The chemical examination, therefore, leads to the conclusion that alum is the chief constituent of Enteronol.

Since there is alum present, but no lupulin, no caffein, no bismuth, and possibly no "latalia rad.," one is forced to the conclusion that the "formula" was never intended to give any real information, that it is meaningless and worthless, and that it is used simply to satisfy the demand for formulas for proprietary remedies.

THE DANGER OF USING PREPARATIONS OF UNKNOWN COMPOSITION.

This preparation furnishes another illustration of the frauds perpetrated by the nostrum manufacturers. A common and inexpensive drug is made the basis of an unscientific mixture that is marketed at an exorbitant rate. No intimation is given in the "formula" of the presence of a drug, which, while of value when indicated, may be harmful if used in certain conditions. Physicians who prescribe such products unknowingly give drugs which may be not only useless but positively dangerous. The fact can not be impressed too often that he who depends for his knowledge of materia medica on the literature of proprietary manufacturers is exposing his patients to unwarrantable risks.

QUINA LAROCHE.

A Cocain Preparation and Its Exposure in Massachusetts.

From the November *Monthly Bulletin* of the State Board of Health of Massachusetts we quote:

"COCAIN PREPARATIONS ADVERTISED AS UNSALABLE."

"During the month of November the following proprietary preparations containing cocain were examined in the laboratory of the board and added to the list of unsalable articles:

"Opal Catarrh Powder, Standard Remedy Co., Boston.

"Quina Laroche, T. Laroche."

Thus it appears that "Quina Laroche," which the promoters say is "far superior to all other quina wines," does not depend for its seductive qualities entirely on the active principles "of the three cinchonas."

This preparation is put out by E. Fougera & Co. To the medical profession this firm is known as a promoter of "ethical proprietaries;" to the public—or a certain element of it—it is equally well-known as the exploiter of various "patent medicines" such as Laville's Pills for rheumatism, Eade's Pills for gout, Ducro's Alimentary Elixir, Roche's Herbal Embrocation, Santal Midy, etc. By the way, the therapeutic efficiency of this last remedy as an antigonorrheic is evidently depreciating for whereas the older advertisements claimed that it "cures in 48 hours," it now merely "relieves in 48 hours."

The Massachusetts board also calls attention to another fact: "Quina Laroche," like its relative, "Vin Mariani," is manufactured in New York, although the labels, circulars, etc., are calculated to convey the impression that it is not only of French origin, but also of French manufacture. The Food and Drugs Act, among other good provisions, contains one that provides that a product must not be misbranded, even as to the place of manufacture, and as a result a small label is now attached stating that "Quina Laroche" is now manufactured in New York.

When American physicians and the American public wake up to the fact that a foreign label is not, in itself, *prima facie* evidence of superior merit, the "Quina Laroche" and "Vin Mariani" type of humbug label will die a natural death. An imposing French title applied to a tonic is no guarantee that the article is not composed of the refuse wines of the California vineyards, any more than the possession of an unpretentious American title is any reason for the rejection of the product as unworthy of consideration.

It is a pleasure once more to note the good work done by the Massachusetts State Board of Health in warning the public of both the dangers and fraudulence of many "patent" and proprietary medicines. The pity is that the reports of these investigations can not get more publicity among the people. The work is by no means lost, however, as the educational campaign now being waged by many of the more progressive boards of health must inevitably result in an awakening of the public.

Correspondence

Ohio Physicians in Practical Politics.

CHICAGO, March 14, 1908.

To the Editor:—Last year you published the very valuable article from Dr. Charles A. L. Reed, chairman of the Committee on Medical Legislation, on "Medical Legislators of Two Republics." In this article and in other contributions, Dr. Reed has called attention to the lessons of his own experience in matters of legislation. He has learned, as have others, that if physicians want something done in the legislatures, or anywhere else, they must do it themselves, not send agents who know nothing about what is wanted. When physicians get together and agree on what they want and then move forward in numbers, they generally succeed. A new era has arrived in the history of the profession, one in which strong representative physicians, busy men in large practice, find it consistent with their dignity and profession to take part in practical politics for the good of the profession and the community.

It is evident that Dr. Reed has been practicing what he preaches in the recent campaign for election of the members of the Ohio State Republican Convention.

The *Cincinnati Enquirer*, March 3, in its Columbus despatches relating to the Ohio State Republican Convention, states, among other things:

The physicians of the state were organized by Dr. Charles A. L. Reed of Cincinnati, for the purpose of getting representation in the convention. They have succeeded beyond their expectations and there are the names of 105 physicians on the roster of the great body now in session here.

The published details of the convention show some additional facts of interest. The physicians number one-eighth of the whole convention. They were all representative men. They met in caucus and determined what they wanted in the organization and in the platform. The presidency went to Secretary Garfield, but Dr. Reed was made the first vice-president of the convention. The committees on rules and on permanent organization, and, most important of all, on resolutions, each contained a strong representation of physicians. The result, according to published reports, was the full realization of the object that the physicians had in view, namely, the adoption by the convention of a plank in its platform committing the party to "the organization of all existing national public health agencies into a single national health department."

The movement for a national department of health was begun by the American Medical Association very early in its history and has been agitated since then with more or less zeal by the Association and the profession. This is the first time, however, that a plank favoring the proposed national department of health was ever adopted by a political convention. It is no small cause for congratulation that Dr. Reed and his Ohio colleagues have succeeded in making this beginning.

They, no doubt, appreciate better than any one else that this is only a beginning. The declarations of a platform, to amount to anything, must be ratified at the polls and redeemed in the legislatures and in Congress. To do this means participation in the campaign. It means, furthermore, that physicians must go to the legislature, not as supplicating committees craving a favor, but as members with power to vote. It means that physicians must go in increasing numbers to Congress—to the House and to the Senate. The movement for a national department of health probably never will succeed until the medical profession sends at least some of its strong men like Reed, Welch and Mayo to champion the cause of public health in the halls of Congress.

The political activity that has been displayed by the physicians of Ohio ought to be taken up in every other state. Declarations in behalf of a movement to unite under one head all of the national agencies of public health ought to be made by every party in every convention in every state, and in every national convention held this year. There are urgent reasons why this should be done. The cause of the proposed department of health is one and a sufficient one. But in addition to this, it is known that within the next eighteen months a prearranged effort will be made to destroy the force of existing medical laws in several states, but particularly in Ohio, New York, Massachusetts and Illinois. The conspiracy has already been hatched. It behooves the medical profession of all the states to be on guard all the time, but in the four states mentioned it is imperative that the guard be placed directly within the halls of legislation. The physicians of the different states ought to furnish 20 per cent. of the members of every legislature elected this year. If this is done state medical laws will be safe and, with additional representation of the medical profession in the Senate and House of Representatives at Washington, the legislation on public health so necessary will speedily become an assured fact.

C. S. BACON,
Member Committee on Medical Legislation, American Medical Association.

The Prophylaxis of Venereal Diseases.

DETROIT, March 13, 1908.

To the Editor:—Much has been said and written on this subject; arguments have been advanced either for or against the periodical examinations and possible licensing of prostitutes. In a recent paper in the *American Journal of Public Hygiene*, Dr. Abner Post, Boston, says: "I believe it would be best for us in New England absolutely and definitely to surrender the idea (for the present, certainly) of license and periodical examination of public women. This expression of belief is not intended to express any opinion, pro or con, as to the value of this method as employed in many foreign cities, but simply a belief that it is not adapted to New England." What Dr. Post says of New England is true, I believe, of the entire world. Periodical examinations have been discontinued in nearly every city and country in which it has been thoroughly tried. In Detroit such a system was in vogue for five years, but was abandoned as worse than useless; in fact, harmful. In the first place, the principle of recognizing the women as a class is wrong; again, the examinations, unless made by public physicians, are unreliable, and even when properly made they can never be made often enough to warrant giving any prostitute a clean "bill of health" to be relied on until the next examination.

What then shall boards of health do with this problem? That question presented itself to the Detroit board of health when it decided to abandon the periodical examinations with their useless certificates of good health, and I believe we have found the remedy. The following method as practiced here has been in use but about two months.

The keepers of all houses of prostitution known to the police have been notified that certificates of health will no longer be required nor accepted by the board of health. The board does not care about certificates, but does care about health. It is its duty to prevent, so far as possible, the spread of all contagious diseases, and venereal diseases are contagious. Therefore, on and after January 1 the health officer, or some physician delegated by him, will visit these houses at unannounced and irregular intervals and examine the inmates. If any are found with a contagious disease (gonorrhea or syphilis) the house will be quarantined.

The placard used on these houses is a large yellow card with the one word "quarantined" printed on it in conspicuous, heavy, black letters. Up to the present four houses have been quarantined. In each case after the placard had been on the house a short time, from one to four days, the keepers of the houses have asked permission to remove the diseased inmate to a hospital for treatment at the expense of the "landlady." This was done, and the patient was in each case isolated at the hospital until reported recovered by her attending physician. Then, after a thorough examination, clinical and bacteriologic, by a physician of the board of health, when found recovered, she was allowed to go.

The new method presents great possibilities and is, in my opinion, the solution of this part of the great problem. It puts the responsibility of keeping well entirely on the women and relieves boards of health from the position of licensing these houses. The contagious diseases, however, are treated as other contagious diseases would be after they have been reported or became known to the public health authorities. In order to make the system more efficient, a physician should devote his entire time to looking up these cases and reporting them, when found, to the board of health.

GUY L. KIEFER, M.D., Health Officer.

Poisoning from Eggs.

MIDDLETOWN, DEL., March 12, 1908.

To the Editor:—Dr. A. J. Anderson, Newport, R. I., in a letter to THE JOURNAL, March 7, page 785, said that he never had seen in the literature a report of poisoning by eggs. Several months ago I was called to such a case.

B. L., a young man aged 19, whose general health is good, always suffers like attacks on consuming food containing the slightest trace of egg. He can not eat griddle cakes, minus the egg, if they are cooked on a griddle which previously had been used for cakes containing eggs. He can not eat cake without eggs if in cutting it the knife has been used to cut a cake containing eggs. One day he called my attention to his idiosyncrasy for such food and declared an attack peculiar to his condition was then raging.

Later in the evening I was called to his home and found him pacing the floor suffering from the following symptoms: Extreme nervousness, conjunctivæ congested, nasal membrane

hyperemic, swollen visage, lips twice their normal size, tongue swollen, and the symptoms descending to arms and hands; he was nauseated, and there was general urticaria with wheals over the body. On removal of his clothing I found a blush scarlatinoid in character over the skin.

I prescribed a saline, a nerve sedative—one of the bromids—and ordered a lotion consisting of phenol fl3ii, boric acid 3i, and water Oi. This treatment produced an excellent and satisfactory result.

The symptoms of an attack are not always alike. The attack may show the symptoms named and in addition nausea and a violent diarrhea. From infancy the smallest amount of egg would produce vomiting and severe restlessness, but not until he was 3 years of age, after eating an egg omelet, was the cause fully ascertained. The extreme symptoms generally last about two hours, but recovery is not complete for two days.

On the father's side there is a slight rheumatic tendency, otherwise the history is good; on the maternal side it is excellent. During gestation the mother was breakfasting on eggs when she found one in a very unsatisfactory condition and suffered an attack of vomiting. The supposition is that the man's idiosyncrasy for eggs arose from the maternal impression.

EDWARD M. VAUGHAN, M.D.

Physical Diagnosis.

LINCOLN, NEB., March 11, 1908.

To the Editor:—Kindly grant me space to answer the criticism by Dr. Ritter (THE JOURNAL A. M. A., March 7, 1908, 767), of my article urging revision of physical diagnosis. The term "tonality" is used in preference to "quality" in order to accord with pitch, rhythm and tempo. I said nothing of its being a percussion note. There are no percussion notes—resonance only. The word "time" is not the equivalent of "tempo." Time denotes the hour of a day, month or year. Tempo is speed of rhythm. To rely on râles (sorry to disturb the American mind by using a French term) even as confirmatory, is to exhibit a compound of uncertainty or timidity—a confession of inability to make a diagnosis. As an example of bad form it is on a par with seeking to establish the well authenticated loyalty of your wife or sweetheart by irrelevant and immaterial confirmatory evidence.

No one has ever clinched a diagnosis by a râle over an area the size of a silver dime. Reason: If a raised pitch is not in evidence, a perverted rhythm will be. I repeat that there is no such thing as pitch in percussion so far as the lungs and bronchi are concerned—nothing but degrees of resonance—normal, excessive or defective. The carpenter percussing a wall, given by Dr. Ritter as an example, is not looking for pitch, but for precisely the same degrees of resonance named above. I did not say that percussion ranks all other methods, but exactly the reverse. Auscultation comes first, because the functional ability of the lung is best ascertained by the ear, not by the fist nor the eye. To begin examination by percussion is putting the cart before the horse. In fairness to twentieth century methods as contrasted to those of the days of Charlemagne, I would ask Dr. Ritter to peruse my article once more—with something approaching a receptive attitude.

J. H. TYNDALE, M.D.

Mortality from Syphilis and Alcohol in Paris Hospitals and Asylums.—C. Fernet has been collecting statistics on this subject for several years, and his latest compilation was recently published in the *Bull. de la Soc. Méd. des Hôp.* In the insane asylums alcohol was directly or indirectly responsible for about half the number of deaths, and in the general hospitals for about a third of 1,059 deaths recorded during the last six months. The proportion of deaths for which acquired syphilis was responsible during this period was 2.22 per cent. of 677 deaths in the general hospitals, and 37.93 per cent. in the insane asylums. Inherited syphilis is more deadly, fully 6 per cent. of abortions being due to this cause, and from 15 to 20 per cent. of the infant death rate in the maternities, and 10 per cent. in the crêches which receive the children up to 2 years old.

Association News

OFFICIAL CALL.

Fifty-Ninth Annual Session of the American Medical Association, Chicago, June 2-5, 1908.

The Fifty-Ninth Annual Session of the American Medical Association will be held on Tuesday, Wednesday, Thursday and Friday, June 2, 3, 4 and 5, 1908, at Chicago.

The House of Delegates will convene at 10 a. m., on Monday, June 1, 1908.

In the House of Delegates the representation of the various constituent associations for the years of 1907, 1908 and 1909 is as follows:

Alabama	3	Montana	1
Arizona	1	Nebraska	2
Arkansas	2	New Hampshire	1
California	3	New Jersey	3
Colorado	2	New Mexico	1
Connecticut	2	New York	11
Delaware	1	Nevada	1
Dist. of Columbia	1	North Carolina	3
Florida	1	North Dakota	1
Georgia	2	Oklahoma	2
Hawaii	1	Oregon	1
Idaho	1	Pennsylvania	8
Illinois	7	Rhode Island	1
Indiana	4	South Carolina	2
Iowa	3	South Dakota	1
Kansas	3	Tennessee	2
Kentucky	3	Texas	5
Louisiana	2	Utah	1
Maine	1	Vermont	1
Maryland	2	Virginia	3
Massachusetts	6	Washington	1
Michigan	4	West Virginia	1
Minnesota	2	Wisconsin	3
Mississippi	2	Wyoming	1
Missouri	4	Philippine Islands	1
Ohio	6		

The twelve sections of the American Medical Association, the Medical Department of the Army, the Medical Corps of the Navy and the Public Health and Marine-Hospital Service are entitled to one delegate each.

The first General Meeting, which constitutes the opening exercises of the scientific functions of the Association, will be held at 10:30 a. m., Tuesday, June 2.

The Registration Department will be open from 8:30 a. m. until 5 p. m., on Monday, Tuesday, Wednesday and Thursday, June 1, 2, 3 and 4, and from 9 to 10 a. m., on Friday, June 5.

JOSEPH D. BRYANT, President.
GEORGE H. SIMMONS, General Secretary.

MEETING PLACES.

List of the Places Assigned for the Various Section Meetings Next June.

The meeting places of the various Sections have been tentatively selected as follows:

PRACTICE OF MEDICINE.—Sinai Temple, Twenty-first and Indiana Avenue. Capacity, 1,200.

OBSTETRICS AND DISEASES OF WOMEN.—Second Presbyterian Church, Twentieth and Michigan Avenue. Capacity, 1,000.

SURGERY AND ANATOMY.—Orchestra Hall, 169 Michigan Avenue. Capacity, 2,800.

HYGIENE AND SANITARY SCIENCE.—First Regiment Armory, Sixteenth and Michigan Avenue. Capacity, 200.

OPHTHALMOLOGY.—First Presbyterian Church, Twenty-first and Indiana Avenue. Capacity, 1,000.

DISEASES OF CHILDREN.—Second Presbyterian Church, Twentieth and Michigan Avenue. Capacity, 250.

STOMATOLOGY.—First Regiment Armory, Sixteenth and Michigan Avenue. Capacity, 75.

NERVOUS AND MENTAL DISEASES.—Calumet Club, Twentieth and Michigan Avenue. Capacity, 250.

CUTANEOUS MEDICINE AND SURGERY.—Grace Parish House, Fifteenth and Wabash Avenue. Capacity, 250.

LARYNGOLOGY AND OTOLOGY.—Sinai Temple, Twenty-first and Indiana Avenue. Capacity, 450.

PHARMACOLOGY AND THERAPEUTICS.—First Presbyterian Church, Twenty-first and Indiana Avenue. Capacity, 250.

PATHOLOGY AND PHYSIOLOGY.—First Regiment Armory, Sixteenth and Michigan Avenue. Capacity, 125.

HUGH T. PATRICK,
Chairman Committee on Halls and Meeting Places.
34 Washington Street, Chicago.

CLINICS FOR CHICAGO SESSION.

Members of the Association to Have Great Clinical Opportunities Next June.

During the week preceding and the two weeks following the session of the American Medical Association next June, public clinics will be given in all the larger hospitals and medical schools in Chicago. These will be free to the members of the American Medical Association. There will be no clinics in any hospital during the four days of the meeting, but clinics will be given on Monday, June 1, and Saturday, June 6, the days before and after the meeting.

An accurate schedule is being prepared, giving the day, hour and place of each clinic, the location of the various hospitals, the street-car facilities and all other desirable information. It will be possible for each physician to be occupied continuously in any one special line or to cover various specialties during this period.

Hospitals having small amphitheaters will issue tickets, which may be obtained at headquarters, in order that clinics may not be uncomfortably crowded. A number of clinics will be conducted in various hospitals at the same hours, which will make it possible for every one who desires to do clinical work during this period to obtain ample facilities in whatever department he may be especially interested.

It has seemed best to stop all clinical work during the four days of the meeting, June 2, 3, 4 and 5, in order to make the work in the various scientific sections the only attraction during this period. This will insure good audiences for those who have prepared papers.

ALBERT J. OCHSNER,
Chairman of the Committee on Clinics.

710 Sedgwick Street.

Hotel Reservations.

The Hotel Association of Chicago has promised 2,500 rooms for the members of the American Medical Association. A list of the principal hotels will be printed next week, with rates, etc. Meanwhile it is suggested that those who expect to attend the session should make arrangements for hotel accommodations as early as possible. Applications for such accommodation can be addressed to the individual hotels or to me.

L. L. MCARTHUR,
Chairman Committee on Hotels.

100 State Street.

Miscellany

THE FIRST CONVICTION.

First Case Under the Food and Drugs Act Resulting in Conviction.

Dispatches from Washington indicate that the jury in the case of Robert N. Harper has returned a verdict of guilty on the charge of violating the national Food and Drugs Act. Mr. Harper is a wealthy business man of Washington, president of the Chamber of Commerce and of the American National Bank. He is engaged in the manufacturing drug business and has been making and selling a preparation called "Curforhedake," "Brane-Fude." The indictment alleged violation of the Food and Drugs Act in four counts, as follows:

1. The name as given above was misleading and constituted misbranding.

2. The manufacturer states that it "does not contain any poisonous ingredients" when as a matter of fact, it does.

3. The phrase "a most wonderful, certain and harmless relief" was a misrepresentation.

4. The fourth count relates to the sale of a misbranded product.

A sample of the preparation was purchased in the district by an inspector. The druggist from whom the article was purchased was given a hearing, at which the manufacturer was present. The case was put in the hands of the proper authorities and a criminal action was brought against the manufacturer. A seizure was made of all misbranded goods in the hands of the manufacturer and of a number of local druggists. The case was tried in the police court before a jury. Evidence for the prosecution showed that the drug consisted of a hydro-alcoholic solution of acetanilid, antipyrin, caffein, and sodium and potassium bromid, alcohol being present to the extent of 24.2 per cent. A number of physicians testified that in their opinion there was no such thing as a "brain food," and that the drug was not harmless nor free from poisonous ingredients. The defense endeavored to show that the dosage as prescribed on the package could not be considered harmful. Before the case went to the jury the government abandoned the second and third counts and rested its case on the first and fourth, viz., those relating to the manufacture and sale of a misbranded drug preparation.

In his charge to the jury, the trial judge discussed a number of points which are of especial interest, as this is the first prosecution under the new law. In considering the meaning of the word "misbranding" the judge informed the jury that, if it found from the evidence that, in any particular, the product known as "Harper's Curforhedake" misstates or states falsely, then the law has been violated. The court also said: "The jury are instructed that in determining the meaning of the words 'brain food', 'cure,' 'poisonous,' and 'harmless,' the definition of which has been called into question by this inquiry, they are to give such words their ordinary and customary meaning as understood by the general public and not a technical meaning. This law was passed . . . for the purpose of protecting ordinary citizens. . . . In determining the meaning of the words used on these cartons, bottles and circulars, they are to be taken in the way that an ordinary plain, common citizen, without scientific knowledge would understand them if they were put before him. With regard to this 'Curforhedake' . . . if that word, spelled in the two different ways that it is spelled, would convey to the ordinary citizen the idea that it was a food for the brain as distinguished from the idea of a food for the whole body, then it is misleading and a violation of the law, and if you find that such a definition is what the ordinary citizen would apply to it, then you would be compelled to bring in a verdict of guilty. . . . Unless you further find from the evidence that there is a known and distinct kind of food that feeds and nourishes the brain as distinct from a food that feeds and nourishes the whole body and that said drug or preparation is such a food and that it feeds and nourishes the brain particularly as distinguished from the food that nourishes all parts of the body, then the jury are instructed as a matter of law that the words 'Brain Food' or 'Brane Fude' are false and misleading."

On the question of dosage the instructions of the judge are equally clear. He says: "The question is not raised whether it (the preparation) is a poison in the doses prescribed in the preparation. That is not the question before the jury. You have nothing to do with the question of whether it is poisonous in the doses prescribed or in larger doses. The sole question raised here for you to consider is whether the said drug contains poisonous ingredients of any kind. If you find from the evidence beyond a reasonable doubt that it did contain poisonous ingredients, whether contained in the doses named, whether they would or would not be harmful, if you find that the drug contained a poisonous ingredient, then your verdict must be guilty, because that is a plain issue."

The jury returned a verdict of guilty. Sentence has been stayed pending an appeal.

Ear Complications of Influenza.—A. O. Pfingst, in the *Louisville Monthly Journal of Medicine and Surgery*, states that probably the most common complication of influenza is inflammation of the middle ear, either purulent or catarrhal. The catarrhal form causes pain in the ears, tinnitus and defective hearing. The drum or drums are reddened, usually in proportion to the symptoms, but do not bulge. In purulent otitis, the pain is usually severe, the temperature higher and the drum bulges. Abscesses of the middle ear accompanying influenza are characterized by the suddenness of the onset, by the tendency to frequent and early complication of the

mastoid, which in turn is characterized by rapid destruction of bone and by the persistence of fever, pain and subjective noises, even after a free discharge of pus has been established. Pfingst also states that a peculiar feature of otitis due to this cause is the formation of blood vesicles on the drum and in the auditory canal.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

THE SIGNIFICANCE OF PHOSPHATURIA.

CLARKSON, KY., March 7, 1908.

To the Editor:—Kindly give me an opinion in regard to the following case: Patient, a male, aged 32, married; family history good, general health good, digestion satisfactory, sexual relations normal, habits good, no diathesis, nervous temperament. For years he has had an almost constant alkaline urine loaded with phosphates. The sediment of phosphates (after urine stands for one or two hours) sometimes equals as much as 20 per cent. of the volume of urine, giving it an almost semi-solid appearance; the urine otherwise is normal. 1. Is this excess of phosphates due to an unstable condition of the nerve tissue, or does the condition probably depend on the products of secondary digestion? 2. In either case, if this condition persists is it not probable that these phosphates acting as an irritant will produce serious organic disease of the kidneys?

B. C. WILSON, M.D.

ANSWER.—1. The condition commonly known as phosphaturia is due to a precipitation of the earthy phosphates, the phosphates of calcium and magnesium, which becomes insoluble in consequence of the alkaline reaction of the urine. The presence of such a deposit is no evidence of an increased production or excretion of the phosphates, but simply shows that the urine has become alkaline. The condition is, therefore, improperly named phosphaturia, but should rather be called alkalinuria. No reliable investigation has shown any increase in the amount of phosphoric acid, above the normal. In some cases a larger amount of earthy phosphates has been excreted because of the increased amount of calcium or magnesium ingested. Normally, calcium is excreted by the intestines, but in some cases the amount of calcium excreted by the intestines is less than normal, and in such cases an increased amount of earthy phosphates appears in the urine. The alkaline reaction of the urine may be due to a large amount of vegetables and fruits. Temporarily, an alkaline reaction of the urine may be produced (a) By the absorption into the blood of salts of the vegetable acids, such as the acetates, citrates, etc. This form of temporary alkalinity may occur from a meal of vegetables or fruit, the urine becoming alkaline from three to six hours after the meal. (b) By the direct ingestion of alkalies such as soda, magnesia, alkaline mineral water, etc. (c) From the secretion of a highly acid gastric juice. In this case the urine becomes alkaline and may be loaded with phosphates shortly after a meal containing a large amount of meat or other proteid food. If there is frequent vomiting of acid the urine may be almost continuously alkaline. The urine is liable to become almost continuously alkaline in patients suffering from hyperacidity of the stomach, who use large doses of alkali to neutralize the acid. No positive evidence has been afforded that the nervous system can influence the reaction of the urine, otherwise than by its influence on the reaction of the gastric juice, but our knowledge of metabolism is by no means sufficient to exclude such a possibility. In a case such as above described the cause of the condition should first be sought in the character of the diet, and if it can not be accounted for in this way, the condition of the digestive organs should be carefully investigated. If neither the diet nor the digestion will account for the condition one might refer it to the action of an unstable nervous system.

2. The phosphates are precipitated in an amorphous condition, and apparently do not produce irritation of the genitourinary tract. They may, however, favor the formation of calculi by collecting around some already formed nucleus. Organic disease of the kidneys is not likely to result from this condition.

WEIL'S DISEASE.

CONCORD, N. H., Feb. 28, 1908.

To the Editor:—Please direct me where to find information on Weil's disease (acute infective jaundice).

MARION L. BUGBEE.

ANSWER.—Weil's disease is described in most of the standard treatises on the practice of medicine. The following is a list of articles which may be referred to. Some of them may not be on Weil's disease, but it is impossible to differentiate them by the title.

Runyon, F. J.: Epidemic Catarrhal Icterus as a Complication of Pregnancy, *Memphis Med. Month.*, June, 1902

Brooks, Grave H.: A Case of Weil's Disease with Delirium, *Arch. Neurol. and Psychopath.*, iii, 3.

Einhorn, M.: Two Cases of Weil's Disease Complicated by the Temporary Appearance of Small Tumors in the Liver, *Am. Jour. Med. Sc.*, November, 1904.

Curwen, E.: Epidemic Catarrhal Jaundice, *Brit. Med. Jour.*, Jan. 11, 1902.

Sandwith, F. M.: Weil's Disease in Egypt, *Jour. Trop. Med.*, Jan. 15, 1904.

Anderson, S.: An Epidemic of Catarrhal Jaundice in Buxar Central Jail, *Indian Med. Gaz.*, November, 1903.

Satterlee, G. R.: A Case of Bacteriuria Resembling Weil's Disease, *Med. News*, June 6, 1903; abstracted in THE JOURNAL, June 20, 1903, p. 1756.

SANDWITH, F. M.: Infectious Jaundice, *Brit. Med. Jour.*, Sept. 17, 1904.

Nicolaysen, L.: Epidemic Icterus, *Deutsche Med. Wochschr.*, xxx, 24; abstracted in THE JOURNAL, July 16, 1904, p. 231.

Robertson, E. W.: Six Cases of Epidemic Jaundice in the Young, *Virginia Med. Semi-monthly*, July 12, 1906.

Ross, H. H.: Acute Epidemic Jaundice, *Journal of Kansas Medical Society*, October, 1906.

Addison, J. L.: Epidemic Catarrhal Jaundice, *Canada Lancet*, April, 1906.

Tucker, E. F. G.: Epidemic of Malignant Jaundice in Bombay, *Indian Medical Gazette*, January, 1907.

Knauth: Weil's Disease, *Deutsche med. Wochschr.*, xxxi, 50.

Thornburg, R. M.: A Fatal Case of Acute Infectious Jaundice (Weil's Disease), THE JOURNAL A. M. A., Aug. 3, 1907, p. 415.

ELECTROTHERAPY WITH THE AUTOMOBILE.

ARKANSAS CITY, KAN.

To the Editor:—Since writing an article to THE JOURNAL on my experience with automobiles I have utilized my electric in a new field. I have had wires run from the rheostat switch in the garage to my office and connected with a wall plate consisting of a milliamperemeter, a rheotome, a rheostat and induction coil. This gives an ideal electrical apparatus with a sixty-volt pressure and amperage sufficient to melt a screw-driver in ten seconds. The current is under perfect control, giving from one milliampere to the heaviest cautery. This will appeal to any electrotherapeutist who realizes the value of the direct current and the annoyance and expense in keeping up a galvanic apparatus. The cost is almost nothing. A day's work will not be noticed on the meter or mileage of the machine. When I run the automobile into the garage I plug in as for a charge, and the current is available at the office night or day. Should the automobile be out and the current needed I have but to throw the switch and the current is delivered from the generator.

J. H. GUINN.

CLEVELAND, OHIO, Feb. 28, 1908.

To the Editor:—During the past two years I have used my electric victoria with my electro-magnet for removing steel and iron from the interior of the eye. The strength of the magnet is greater than that from the street current. My electrician tells me that it is fully one-third stronger. It has saved me the expense of a motor generator, and can be used anywhere. I have used it at least thirty times, and it has never failed me.

A. R. BAKER.

HENOCH'S DISEASE—EPONYMIC NOMENCLATURE.

NEW YORK, Feb. 21, 1908.

To the Editor:—In THE JOURNAL, Feb. 15, 1908, page 545, you mention Henoch's disease as a cause of hematuria. Can you tell me of any book that will tell me in the index where I can find all about Henoch's, Brown's or Smith's diseases. Would it not be a good rule to accept no article with a proper name classification unless along with it there is a name by which it can be looked up in text-books. The more I think about "Henoch's disease" the more "I want to know."

JOHN WOODMAN.

ANSWER.—Henoch's disease is a form of purpura, and is usually called Henoch's purpura. On consulting nine text-books on the practice of medicine we found it indexed in all but one. In two cases it was referred to as "Henoch's disease;" in the other cases as "Henoch's purpura," the name being put only under purpura in a few cases. The name of this disease is one of those called eponymic, being arbitrarily derived from proper names. Such names are correspondingly lacking in connotation, and consequently impose an extra, and entirely unnecessary, burden on the memory. Their use should be widely discouraged, in spite of the arguments for the historical feature and the honor to the original investigator. In a few cases, however, the eponymic title has brevity decidedly in its favor, as, unfortunately, it is not possible to use a title sufficiently descriptive to identify the disease in all cases. To detail the symptoms characteristic of Adams-Stokes disease in all cases where this is referred to, would be very cumbersome. The same is true of some other diseases which are conveniently characterized by a special name, usually that of the one who first described it.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending March 14, 1908.

Davis, W. B., deputy surgeon general, and Van Dusen, J. W., asst. surgeon, appointed members of an Army retiring board, to meet at Omaha, for the examination of such officers as may be ordered before it.

Wilson, W. H., surgeon, detailed to accompany the 35th Company Coast Artillery Corps from Fort Monroe, Va., to San Francisco. He will proceed at the proper time to Fort Monroe, Va., reporting on arrival to the company commander. On completion of this duty to return to Fort Hamilton, N. Y.

Corbusier, W. H., deputy surgeon-general, is relieved from further duty as chief surgeon, Department of the Columbia, and will proceed to his home, where, for his own convenience, he is authorized to await retirement from active service.

Carswell, R. L., asst.-surgeon, granted two months' leave of absence, with permission to apply for an extension of one month.

Shortlidge, E. D., asst.-surgeon, granted leave of absence for three months.

Reasoner, M. A., asst.-surgeon, is relieved from further duty in the Philippines Division, and assigned to duty in the Army Transport Service, with station at San Francisco.

Bratton, T. S., asst.-surgeon, on arrival at San Francisco, will proceed to Fort Des Moines, Iowa, and report in person to the commanding officer of that post for duty and by letter to the commanding general, Department of the Missouri.

Parkman, W. E., contract surgeon, ordered to return from Fort William H. Harrison, Mont., to his proper station, Fort Keogh, Mont.

Suggs, Frank, contract surgeon, ordered from Fort Niagara, N. Y., to Madison Barracks, N. Y., for temporary duty.

Stallman, G. E., dental surgeon, granted leave of absence for one month, with permission to apply for an extension of two months.

Voorhies, H. G., dental surgeon, relieved from treatment at Fort Leavenworth, Kans., and ordered to return to his proper station, Fort D. A. Russell, Wyo., for duty..

McAllister, J. A., dental surgeon, ordered from Fort Sheridan, Ill., to Chicago, Ill., for duty at Headquarters, Department of the Lakes.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending March 14, 1908:

Richards, T. W., surgeon, detached from the *Colorado* and ordered to the Naval Hospital, Mare Island, Cal., for treatment.

Brown, E. M., P. A. surgeon, granted sick leave for three months, when discharged from treatment at the Naval Hospital, New Fort Lyon, Colo.

Moran, C. L., asst.-surgeon, ordered to duty at the Naval Hospital, Norfolk, Va.

Stanley, A. C., asst.-surgeon, ordered to duty at the Naval Medical School Hospital, Washington, D. C.

Bogert, E. S., Jr., surgeon, detached from the *Pennsylvania* and ordered to the Naval Academy.

Urie, J. F., surgeon, detached from the Bureau of Medicine and Surgery, Navy Department, and ordered to the *Pennsylvania*.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended March 11, 1908:

Pettus, W. J., asst.-surgeon general, granted leave of absence for 3 days, from March 9, 1908.

Stimpson, W. G., surgeon, directed to report to commanding officer of the revenue-cutter *Thetis* for temporary duty.

Oakley, J. H., P. A. surgeon, directed to assume temporary charge of the Marine-Hospital at Port Townsend, Washington, during the absence of Surgeon W. G. Stimpson.

Cumming, H. S., P. A. surgeon, directed to proceed to Kobe, Japan, for special temporary duty, on completion of which to rejoin his station.

Von Ezdorf, R. H., P. A. surgeon, directed to proceed to New Orleans, for special temporary duty, on completion of which to rejoin his station.

Frost, W. H., asst.-surgeon, granted leave of absence for 2 days, from Feb. 29, 1908, under Paragraph 191, Service Regulations.

de Valin, Hugh, asst.-surgeon, granted leave of absence for 2 days from March 3, 1908, under Paragraph 191, Service Regulations.

Duke, B. F., acting asst.-surgeon, granted leave of absence for 7 days, from March 10, 1908.

Stanton, J. G., acting asst.-surgeon, granted extension of leave of absence for 7 days, from March 6, 1908.

Wetmore, W. O., acting asst.-surgeon, granted leave of absence for 8 days in February, 1908, under Paragraph 210, Service Regulations.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the surgeon-general, Public Health and Marine-Hospital Service during the week ended March 13, 1908:

SMALLPOX—UNITED STATES.

California: Berkeley, Feb. 8-15, 1 case; Los Angeles, Feb. 15-22, 11 cases; San Francisco, Feb. 8-22, 11 cases.
District of Columbia: Washington, Feb. 22-29, 2 cases.
Illinois: Springfield, Feb. 20-27, 3 cases.
Indiana: Indianapolis, Feb. 22-March 1, 3 cases; La Fayette, Feb. 23-March 2, 1 case; Muncie, Feb. 22-29, 1 case; South Bend, Feb. 22-29, 1 case.
Iowa: Ottumwa, Feb. 22-29, 2 cases.
Kansas: Kansas City, Feb. 22-29, 11 cases.
Kentucky: Covington, Feb. 22-29, 4 cases.
Louisiana: New Orleans, Feb. 22-29, 13 cases (11 imported).
Massachusetts: Fall River, Jan. 4-11, 1 case.
Michigan: Saginaw, Feb. 15-22, 6 cases.
Missouri: Kansas City, Feb. 15-29, 26 cases; St. Joseph, Feb. 15-22, 17 cases.
Montana: Butte, Feb. 18-25, 1 case.
New York: Buffalo, Feb. 22-29, 1 case.
Ohio: Cincinnati, Feb. 22-28, 25 cases; Toledo, Feb. 15-22, 2 cases.
Tennessee: Knoxville, Feb. 22-29, 8 cases; Nashville, 8 cases.
Texas: San Antonio: Feb. 8-22, 6 cases.
Washington: Spokane, Feb. 15-22, 14 cases.
Wisconsin: La Crosse, Feb. 22-29, 9 cases; Manitowoc, Feb. 15-22, 1 case.

SMALLPOX—FOREIGN.

China: Amoy, Jan. 4-25, present; Hongkong, Jan. 11-25, 37 cases, 33 deaths.
India: Bombay, Jan. 28-Feb. 4, 8 deaths; Calcutta, Jan. 11-18, 8 deaths.
Italy: General, Feb. 6-13, 117 cases.
Japan: Nagasaki, Feb. 6, 2 cases; Tokyo, Feb. 12, 300 cases; Yokohama, Dec. 28-Feb. 12, 197 cases, 63 deaths.

YELLOW FEVER.

Barbados: Bridgetown and vicinity, Jan. 29-Feb. 18, 4 cases, 2 deaths.
Cuba: Santa Clara, Feb. 28, 1 death.
Venezuela: Ciudad Bolivar, Feb. 26, 1 death.

CHOLERA—INSULAR.

Philippine Islands: Manila, Jan. 11-Feb. 1, 127 cases, 106 deaths; Zambales Province, to Feb. 1, 158 cases, 108 deaths.

CHOLERA—FOREIGN.

India: Calcutta, Jan. 11-18, 27 deaths; Madras, Jan. 25-31, 7 deaths; Rangoon, Jan. 18-25, 3 deaths.

PLAGUE—FOREIGN.

China: Hongkong, Jan. 11-18, 4 cases, 4 deaths.
India: Bombay, Jan. 28-Feb. 4, 35 deaths; Calcutta, Jan. 11-25, 13 deaths; Rangoon, Jan. 18-25, 6 deaths.
Peru: Catacaos, Jan. 23, 8 cases, 6 deaths; Chepen, 2 cases, 1 death; Lambayeque, 2 cases, 3 deaths; Lima, 5 cases, 3 deaths; Paita, 2 cases, 1 death; San Pedro, 1 case, 1 death; Trujillo, 18 cases, 5 deaths.

Marriages

EDWIN J. SCHISLER, M.D., to Mrs. Lily Chipley, both of St. Louis, March 2.

EDWARD BRENT MITCHELL, M.D., Lawton, Okla., to Miss Florence Manaugh of Indianapolis, March 3.

AUGUSTUS MAVERICK, M.D., San Antonio, Texas, to Miss Elizabeth A. Baxter of Philadelphia, March 6.

J. MELVIN NEWBERN, M.D., Jarvisburg, N. C., to Miss Lillian Mendora Burke of Bealeton, Va., January 30.

AMBROSE LOUIS HAMMEREL, M.D., Glendive, Mont., to Miss Anna Martha Wolf of Stillwater, Minn., February 26.

ALICE ROBINSON EVANS, M.D., Youngstown, Ohio, and WILLIAM GREY MILLER, M.D., New Castle, Pa., in London, Eng., February 14.

Deaths

Oliver John David Hughes, M.D. Long Island College Hospital, Brooklyn, N. Y., 1875; a member of the American Medical Association; town physician of Meriden, Conn., for four years; and a member of the board of school visitors and health board; in 1897 appointed United States consul at Sonneberg, Germany, and later consul general at Coburg; since 1904 a practitioner of New Rochelle, N. Y.; a veteran of the Franco-Prussian War; died suddenly at his office in New Rochelle, March 5, from cerebral hemorrhage, aged 52.

Rome V. Wagner, M.D. Central College of Physicians and Surgeons of Indiana, Indianapolis, 1889; of Chicago; for one year a practitioner, and thereafter engaged in the manufacture of electric apparatus and appliances for physicians' use; president of the R. V. Wagner Company; who was operated on in December and again in January for cancer of the face and neck, due to prolonged *x*-ray exposure; died from secondary carcinoma of the liver, March 12, at Passavant Memorial Hospital, Chicago, aged 38.

Dennis J. Brannen, M.D. Eclectic Medical Institute, Cincinnati, 1881; a member of the American Medical Association and Association of Santa Fé Railway Surgeons; for 20 years physician to the Arizona Lumber and Timber Company, Flagstaff; at one time a member of the territorial legislature; health officer of Coconino County, and major surgeon in the National Guard of Arizona; died suddenly March 4 in Washington, D. C., where he was spending the winter, from cerebral hemorrhage, aged 50.

David Maclay, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1875; a member of the American Medical Association; formerly a member of the Pennsylvania legislature, and one of the founders and a trustee of Chambersburg (Pa.) Trust Co.; treasurer of Franklin County and postmaster of Chambersburg, died at his home from spinal disease, March 3, after an illness of several months, aged 56.

Edwin R. Brush, M.D. University of Vermont, College of Medicine, Burlington, 1858; a member of the Vermont State and Lamoille County medical societies; surgeon of the Second Vermont Volunteer Infantry in the Civil War; president of the board of pension examiners at Morrisville; for 28 years justice of the peace; died suddenly at his home in Cambridge, Vt., February 27, from angina pectoris, aged 71.

James Williams Dalby, M.D. College of Physicians and Surgeons in the City of New York, 1889; of Cedar Rapids, Iowa; a member of the Iowa State and Linn County medical societies; for 15 years professor of ophthalmology in the University of Iowa, College of Medicine, Iowa City; died at St. John's Hospital, Springfield, Ill., March 4, from diabetes, after an illness of three days, aged 44.

John Duncan McMillan, M.D. Jefferson Medical College, Philadelphia, 1876; of Lumberton, N. C.; a member of the Medical Society of the State of North Carolina and president of the Robeson County Medical Society; died at the James Walker Memorial Hospital, Wilmington, N. C., March 4, from peritonitis, a week after an operation for intestinal obstruction due to malignant disease, aged 57.

Will L. McGavic, M.D. Keokuk Medical College, College of Physicians and Surgeons, 1900; a member of the Tri-State Medical Society of Tennessee, Arkansas and Mississippi; consulting surgeon to St. Bernard's Hospital, Jonesboro, Ark.; president of the Hardy, Ark., board of health; local surgeon for the Frisco System; died at his home, February 19, aged 43.

Edward Dubois Woodhull, M.D. Dartmouth Medical School, Hanover, N. H., 1895; a member of the medical societies of the State of New York and County of Orange; of Monroe, N. Y.; died in St. Augustine, Fla., March 8, having never recovered after an operation for appendicitis performed at Roosevelt Hospital, New York City, in January last, aged 45.

Samuel O. DeFreece, M.D. St. Joseph (Mo.) Hospital Medical College, 1883; a member and president of the school board of Sidney, Iowa, for several years; a member of the pension board and coroner of Fremont County; died at his home in Sidney, March 4, from fatty degeneration of the heart, after an illness of about three years, aged 48.

John Milton Sadler, M.D. Medical Department of the Tulane University of Louisiana, New Orleans, 1873; a member of the American Medical Association; visiting physician to St. Margaret's Hospital, Montgomery, Ala.; died suddenly March 7, from cerebral hemorrhage, while attending a meeting of the Montgomery County Medical Society, aged 59.

Norman Watson Judd, M.D. Rush Medical College, Chicago, 1899; from 1898 to 1900 inclusive a faithful member of the editorial staff of THE JOURNAL, who was obliged to leave Chicago on account of tuberculosis in 1901; and has since traveled over the west; died in Santa Barbara, Cal., March 7, from tuberculosis, aged 36.

Orin C. Lamb, M.D. Hospital College of Medicine, Medical Department, Central University of Kentucky, Louisville, 1893; a member of the American Medical Association; local surgeon at South Chicago, of the Chicago City Railway Company; died suddenly, March 12, while leaving his office to answer an emergency call, aged 52.

John Backus Taylor, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1902; M.R.C.S., England, 1904; a member of the American Medical Association and a prominent practitioner of Vinita, Okla., died at his home in that city, March 3, from typhoid fever, after an illness of 12 days, aged 30.

William Morris Urquhart, M.D. University of Pennsylvania, Department of Medicine Philadelphia; assistant surgeon of the Sixteenth Pennsylvania Infantry, U. S. V., throughout the Spanish-American War; died at his home in Orange, N. J., February 20, from pneumonia, after an illness of two days, aged 34.

Samuel P. Hickman, M.D. Medical College of Indiana, Indianapolis, 1874; a member of the American Medical Association; coroner of Miller County, Mo.; member of the local pension examining board; died at his home in Ulman, February 16, from pneumonia, after an illness of eight days, aged 58.

Armand L. F. Dufloo, M.D. Academy of Medicine, Paris, France, 1860; surgeon of the Seventieth New York Volunteer Infantry, and later of the Third New York Volunteer Cavalry, during the Civil War; died at his home in New York City, February 29, after an illness of three months, aged 75.

Archie Campbell White, M.D. College of Physicians and Surgeons in the City of New York, 1891; of New York City; formerly resident physician at the Willard Parker Hospital, New York City; died at the home of his parents in Wakefield, R. I., March 1, from acute nephritis, aged 39.

Benjamin Franklin Mathas Blake, M.D. Bellevue Hospital Medical College, New York City, 1890; a member of the Florida Medical Association, Hillsboro County Medical Society, and Brooklyn (N. Y.) Medical Society; died at his home in Tampa, Fla., Nov. 28, 1907, aged 52.

George F. Coutant, M.D. Hahnemann Medical College and Hospital, Philadelphia, 1872; coroner of La Salle County, Ill.; a member of the city council of La Salle and visiting physician to St. Mary's Hospital; died at his home, March 3, after an illness of about six months, aged 69.

Samuel M. Brown, M.D. Missouri Medical College, St. Louis, 1875; a member of the Missouri State Medical Association and Monroe County Medical Society; died at his home in Monroe City, Mo., March 2, from peritonitis, three days after an operation for appendicitis.

Frederick W. Goodwin, M.D. Halifax (N. S.) Medical College, 1885; M.R.C.S. (Eng.), 1899; L.R.C.P. (Lond.) 1899; president of the Halifax Branch of the British Medical Association, and professor of materia medica in Halifax Medical College; died Dec. 18, 1907, aged 51.

James R. Gow, M.D. George Washington University, Department of Medicine, Washington, D. C., 1906; of Washington, D. C.; an employé of the State Department; died at the Emergency Hospital in that city, February 29, from asthma, after a short illness, aged 41.

Jacob Chamberlain, M.D. College of Physicians and Surgeons in the City of New York, 1859; one of the pioneer medical missionaries in the Telegu district of India; died from paralysis at his home in Madanapalle, Madras Presidency, South India, March 2, aged 72.

Thomas D. Hairston, M.D. Medical Department of the Tulane University of Louisiana, New Orleans, 1890; of Clifton, S. C.; a member of the South Carolina Medical Association and Spartanburg County Medical Society; died at Manatee, Fla., March 1, aged 39.

Elmer Wesley Mitchell, M.D. Jefferson Medical College, Philadelphia, 1905; of Fall River, Mass.; a member of the Massachusetts and Bristol District medical societies; died at St. Anne's Hospital, Fall River, March 5, from pneumonia, after a brief illness.

Samuel M. Carrigan, M.D. Missouri Medical College, St. Louis, 1879; a member of the American Medical Association, and once president of the Arkansas Medical Society; died suddenly from heart disease at his home in Hope, Ark., March 9, aged 51.

W. P. Smallwood, a retired practitioner of Paris, Tenn., a Confederate veteran and representative in the legislature from Henry County in 1880; died at his home near Paris, January 31, from nephritis, after an illness of one year, aged 70.

Granville Albert Harlow, M.D. Medical School of Maine, Medical Department of Bowdoin College, Brunswick, 1881; a member of the American Medical Association; died at his home in Tyngsboro, Mass., March 10, from pneumonia, aged 50.

James Metcalfe Horne, M.D. Medical School of Harvard University, Boston, 1855; city physician of Lawrence, Mass., for two years; and for a number of years a practitioner of that city; died in Boston, March 1, from pneumonia.

Miar McLaughlin, M.D. Bellevue Hospital Medical College, New York City, 1865; a member of the Michigan State and Jackson County medical societies; of Jackson, Mich.; died March 2, in Tampa, Fla., from paralysis, aged 68.

Frank Byron Look, M.D. Medical School of Maine, Medical Department of Bowdoin College, Brunswick, 1885; of Vineyard Haven, Mass., died suddenly from cerebral hemorrhage at West Tisbury, Mass., Dec. 13, 1907, aged 50.

Astyana M. Douglas, M.D. University of Nashville (Tenn.) Medical Department, 1861; of Covington, Texas; formerly state senator; died at the Cleburne Sanatorium, March 1, after an illness of several weeks, aged 69.

J. G. Gaines, M.D. Kentucky School of Medicine, Louisville, 1894; proprietor of the Pinnacles Sanitarium, near Sturgeon,

Mo.; formerly a practitioner of Columbia, Mo.; died recently from heart disease, aged 45.

Egbert H. Lathrop, M.D. Cleveland (Ohio) University of Medicine and Surgery, 1881; a veteran of the Civil War; died at his home in Hastings, Mich., March 7, from nephritis, after a long illness, aged 69.

Samuel Preston Cropper, M.D. College of Physicians and Surgeons in the City of New York, 1877; of New York City; inspector of the department of health; died Dec. 19, 1907, after a long illness, aged 60.

Henry Clay Fish, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1896; died at his home in East End, Pittsburg, from pneumonia, March 2, after an illness of one week, aged 52.

William C. Richards (License, Connecticut, 1893); an eclectic practitioner of Bristol, Conn.; a veteran of the Civil War; died suddenly near his home, March 6, from cerebral hemorrhage, aged 62.

E. L. Drummond, M.D. Memphis (Tenn.) Hospital Medical College; died at his home in Calvin, La., Dec. 30, 1907, from mitral heart disease, after an illness of four or five weeks, aged 32.

E. Hall Richardson, M.D. University of Maryland School of Medicine, Baltimore, 1891; died at his home in Belair, Md., March 7, from pneumonia, after an illness of ten days, aged 40.

John M. Ripple, M.D. Jefferson Medical College, Philadelphia, 1868; a veteran of the Civil War; died at his home in Waynesboro, Pa., March 9, after an illness of several weeks, aged 65.

Charles K. Ladd, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1887; died at his home in Towanda, Pa., Oct. 21, 1907, from chronic nephritis, aged 57.

John J. McLaughlin, M.D. Jefferson Medical College, Philadelphia, 1891; a member of the American Medical Association; died at his home in Philadelphia, Nov. 24, 1907, aged 56.

Napoleon Matte, M.D. Laval University Medical Department, Quebec, 1882; of Keene, N. H., died at the home of his family in Worcester, Mass., March 4, from pneumonia, aged 56.

Charles F. Zimmerman, M.D. Chicago Homeopathic Medical College, 1885; died at his home in Braddock Heights, Frederick County, Md., from tuberculosis, March 5, aged 56.

Evander C. Ellis, M.D. Medical Department of the Tulane University of Louisiana, New Orleans, 1881; died suddenly at his home in Hot Springs, Ark., March 7, aged 66.

William S. Bryan, M.D. Rush Medical College, Chicago, 1882; died at his home in Cambridge, Ill., March 5, from pneumonia, after an illness of three weeks, aged about 50.

Vincent E. Rader, M.D. College of Physicians and Surgeons, Baltimore, 1892; died at his home in Pittsburg, Pa., March 4, after an operation for appendicitis, aged 42.

Israel Brundage (License, Ohio), died at his home in Delphos, Ohio, February 8, from chronic bronchitis, from which he had suffered for 40 years, aged 80.

Nelson Hunting, M.D. New York Homeopathic Medical College and Hospital, New York City, 1869; died at his home in Albany, N. Y., Dec. 22, 1907, aged 70.

Henry D. Renner, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1854; died at his home in Philadelphia, Dec. 9, 1907, aged 74.

Clark W. Dunlop, M.D. Eclectic Medical College of the City of New York, 1880; of New York City; died at his home in New York City, March 6, aged 63.

Charles T. Jones, M.D. Marion-Sims College of Medicine, St. Louis, 1897; died at his home in Toronto, Kan., February 23, after an illness of three days.

Elmer E. J. Barney, M.D. University of Vermont, College of Medicine, Burlington, 1905; died at his home in Berlin, N. H., Dec. 18, 1907, aged 33.

Rowland T. Hart, M.D. Eclectic Medical Institute, Cincinnati, 1867; formerly of Macomb City, Miss.; died recently at Pickens, Miss., aged 75.

M. Elizabeth Schugens, M.D. University of Buffalo (N. Y.) Medical Department, 1901; died at her home in Buffalo, Dec. 25, 1907, aged 42.

Mary Du Bois, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1871; died at her home in Hyde Park, N. Y., March 2.

William Lyons, M.D. Pennsylvania Medical College, Gettysburg, 1866; of Philadelphia, died at Secane, Pa., Oct. 23, 1907, aged 73

Gerald Sheil, M.D. Bellevue Hospital Medical College, New York City, 1894; died at his home in New York City, March 5.

Henry W. Fowler, M.D. Physio-Medical College, Cincinnati, 1856; died at his home in Cincinnati, March 3, aged 83.

Deaths Abroad.

Robert Sydenham Fancourt Barnes, M.D. Aberdeen, 1878; M.B., C.M., 1875; M.R.C.P., London, 1877; F.R.S., Edin., a brilliant gynecologist, writer and operator, was educated in France, at Lincoln College, Oxford, and Aberdeen University. Compelled to retire from practice several years ago by reason of ill health, he had been senior physician to the Chelsea Hospital for Women; physician to the General Lying-in Hospital; obstetric physician to the Great Northern Central Hospital; consulting physician to the British Lying-in Hospital and to the Royal Maternity Charity; editor of the *British Gynecological Journal*, and formerly subeditor of the *British Medical Journal*; joint author, with his father, the late Robert Barnes, M.D., whose death was chronicled only a few months ago, of a "System of Obstetric Medicine and Surgery," and author of a "Manual of Midwifery for Midwives," which ran through nine editions. He was an honorary and corresponding fellow of several foreign gynecologic societies, among them that of Boston, U. S. A. He died recently at Worthing, England, after a prolonged period of invalidism, aged 59.

Reginald Harrison, F.R.C.S. Eng., L.S.A.; past vice-president and a member of the council of the Royal College of Surgeons; for many years surgeon to the Liverpool Royal Infirmary; lecturer in the Royal Infirmary School of Medicine and Victoria University; Hunterian professor of surgery in 1890; president of the Medical Society of London in 1896, and two years later vice-president of the Royal Medico-Chirurgical Society; who moved from Liverpool to London in 1889; whose treatise on "Surgical Disorders of the Urinary Organs" placed its author in the forefront of genitourinary surgeons; died February 28, at his home in London, from pneumonia following influenza, after an illness of eight days, aged 69.

E. Moritz, M.D., one of the leading surgeons of Russia and a writer on surgical subjects; chief of the Obuchow and later of the Alexander Hospital at St. Petersburg; founder of the *St. Petersb. med. Wochschr.* in 1876; died at St. Petersburg, February 1, from croupous pneumonia, aged 70.

Sir Alfred Cooper, F.R.C.S. (England and Edinburgh), of London; formerly vice-president of the Royal College of Surgeons of England and a member of its council; consulting surgeon to the West London Hospital, St. Mark's and the Lock Hospital; died at Mentone, France, March 10, aged 69.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Kentucky's New Pure Food Law.

Kentucky has just passed a pure food and drug law, based on the national Food and Drugs Act, and incorporating some of the important features of other state legislation, especially of Tennessee. A summary of the bill follows:

Section 1 makes it unlawful to manufacture or have for sale any food or drugs which is adulterated or misbranded within the meaning of the act, and provides a fine of from $10 to $100 and imprisonment not to exceed fifty days, or both.

Section 2 defines the term food, for the purposes of the act, as including every article used for or entering into the composition of food or drink for man or domestic animals, including spirituous, vinous or malt liquors.

WHAT IS MISBRANDING OF FOOD.

Section 3 defines misbranding as follows: (1) If the package or label shall bear any statement purporting to name any ingredient or substance as not being contained in such an article, which statement shall not be true in any part, or any statement purporting to name the substances of which such an article is made, which statements shall not give fully the name or names of all substances contained in any measurable quantity. (2) If the article is branded or labeled in imitation of or sold under the name of another article, or is an imitation either in package or label of any other substance of a previously estab-

lished name, or if it is labeled or branded so as to deceive or mislead the purchaser or consumer as to where the article is made or as to its true nature or substance or as to any identifying term whereby the purchaser or consumer might expect the article to possess any property or degree of purity or quality which the article does not possess. This provision applies to all statements made in the label or the advertisement or any means by which representations regarding the product are made to the purchaser or consumer. (3) In the case of certified milk, if it is sold or labeled certified milk and has not been so certified under rules adopted by any county medical society or if when so certified it does not conform to that degree of purity and quality necessary for infant feeding. (4) Misrepresentation as to the weight or measure, length of time the product has been ripened, stored or aged, where packed or produced or the length of time it has been kept in tin or other receptacle.

WHAT IS ADULTERATION OF FOOD.

Adulteration is defined to be, (1) Mixing or packing any substance with the article so as to reduce or injuriously affect its quality or strength; (2) if any substance is substituted either wholly or in part for the article; (3) if any valuable constituent of the article has been wholly or in part abstracted or if the product is below the standard of purity or quality represented to the purchaser or consumer; (4) if it is mixed, colored, coated, polished, powdered or stained so that damage is concealed; if it is made to appear better or of greater value than it is, or if it is colored or flavored in imitation of the genuine color or flavor of another substance of a previously established name; (5) if it contains poisonous ingredients, dangerous to health, or antiseptics or preservatives injurious to health or not stated on the main label; (6) if it contains or is manufactured from a diseased, contaminated, filthy or decomposed substance, either animal or vegetable, unfit for food, or is in any part the product of a diseased animal or of an animal that has died otherwise than by slaughter or that has been fed on the offal from a slaughter-house, or if it is the milk from an animal fed on a substance unfit for food for dairy animals or of an animal kept and milked in filthy or contaminated surroundings.

DRUGS AND REQUIREMENTS CONCERNING THEM.

Section 5 defines drugs to include all preparations recognized in the latest editions of the United States Pharmacopeia or the National Formulary, and any substance or mixture intended to be used for the cure, mitigation or prevention of diseases of man or animals.

Section 6 provides that drugs shall be deemed adulterated if, when sold under the name recognized in the U. S. P. or N. F. they differ from the standards laid down in those authorities; (2) if the standard of purity falls below the professed standard or quality under which it is sold; (3) if one article is substituted for a different article or if a greater or less quantity of any ingredient specified in the prescription is used.

Section 7 provides that drugs shall be regarded as misbranded (1) if the package or label bears any statement which is false or misleading in any particular (including place of production); (3) if the original contents of the container have been removed in whole or in part and any other contents placed therein; (4) if the container fail to bear a statement of any alcohol, morphin, opium, cocain, heroin, alpha or beta eucain, chloroform, cannabis indica, chloral hydrate or acetanilid or any derivative thereof. Special clauses provide that this shall not apply to the dispensing of prescriptions written by a regularly licensed practicing physician, veterinary surgeon or dentist; that it shall not interfere with the existing laws regarding the practice of medicine or pharmacy, and that no prescription shall be knowingly refilled except for the person for whom it was written.

TESTS TO BE MADE.

Section 8 authorizes the director of the Kentucky Agricultural Station to make examinations of samples of food and drugs manufactured or on sale in the state or which the State Board of Health or the State Board of Pharmacy or any county and city attorney of the state may suspect of being adulterated or misbranded. For the sake of uniformity the director is instructed to confer with the United States Department of Agriculture. All rulings pertaining to sanitation shall be collaborated in connection with the State Board of Health. The Kentucky Pharmaceutical Association and the Kentucky State Medical Association are authorized to select one representative who shall act with the director to make and establish all rules and regulations for governing and carrying out the provisions of the act relating to drugs.

METHOD OF PROSECUTION.

Section 9 provides that when any article is found to be adulterated or misbranded, the director of the Agricultural Station shall certify the facts to the commonwealth attorney of the district, county or town in which the adulterated article was found, together with a sworn statement of the results of the examination. Every commonwealth attorney to whom such a report shall be sent or to whom the State Board of Health, the State Board of Pharmacy or the chief health officer of any county, state or town shall report any violations, shall constitute proceedings against the party violating the act. Manufacturers or dealers are to be notified of the findings and given a hearing within fifteen days before the report is made.

Section 10 provides for annual reports to the government on the part of the director, and for the issuing of bulletins from the State Agricultural Station, giving the results of inspections and analyses.

Section 11 authorizes the Experiment Station to receive $7.50 for the analysis or examination of any sample taken in accordance with the act or for inspections of factories, grocery stores, bakeries, slaughter-houses, etc. The board of control of the Experiment Station is directed to render an itemized account to the state auditor each year.

Section 12 provides that manufacturers shall file with the director of the Agricultural Station the name of the product, place of manufacture, and a true copy of all labels used.

Section 13 provides for a guaranty to be made by the manufacturer or wholesaler for the protection of the purchaser.

The section regarding drugs and liquors is not to take effect until Jan. 1, 1909.

The New Jersey Antivivisection Bill.

The *Journal of the Medical Society of New Jersey* for March comments on the hearing on the antivivisection bill introduced into the general assembly of that state. This hearing was held by the legislative committee, to which it had been referred. Four men and two women were present as advocates of the bill and spoke in favor of its adoption. About 250 prominent physicians from all parts of the state, together with leading men from New York City, Philadelphia, Princeton University, Rutgers College and the Rockefeller Institute for Scientific Research were present to present the scientific side of the case.

According to the *Journal*, the advocates of the bill disclaimed opposition to animal experimentations, but wanted such regulations, restrictions and inspections as would practically prevent the progress of medicine. They wished such experimentation confined to medical schools. They magnified the number of cases of abuse, and stated that many able surgeons were opposed to animal experimentation, deeming it unnecessary. In reply to questions asked by members of the legislative committee, the supporters of the bill could cite no cases, of their own knowledge, of cruelty which had occurred in the state. They based their statements on newspaper reports. They were not able to give the name of a single surgeon who was opposed to animal experiments.

In opposition to the bill, Dr. E. J. Ill, president of the Medical Society of the State of New Jersey, spoke as the representative of 1,400 physicians. Dr. Lowery stated that he introduced the bill at the request of another member, that he did not think it was a proper bill, and that he was opposed to its passage. He was followed by Dr. F. D. Gray of Jersey City, Dr. Herman H. C. Herold, president of the Newark Board of Health, Professor Scott of Princeton University, Professors Lee and Curtis of Columbia College, New York, Dr. Hare of Philadelphia, Dr. Flexner, director of Rockefeller Institute, Drs. Le Fevre and Coakley of New York and Dr. Kipp of Newark. These gentlemen, most of them recognized authorities in different lines of scientific research, presented the objections to, and the fallacies of, such legislation.

The bill closely resembles the one now before the New York legislature, as well as the bill introduced in New York last year, which was killed by the committee after a public hearing. This bill is of particular importance, inasmuch as the Rockefeller Institute is located in New Jersey, and the adoption of the bill would put an end to research work on the cause and prevention of many diseases of man and animals. It is to be hoped that the united stand taken by the scientific men of New Jersey will be sufficient to defeat the bill summarily.

Needed Legislation Defeated in Virginia.

The *Bulletin of the Virginia Board of Health*, February, contains an item regarding the sanitary legislation recommended by the board with particular reference to a bill for the prevention of tuberculosis, now before the Virginia legislature. The *Bulletin* says: "The above bill with reference to the segregation of the tuberculosis patients in hospitals, prisons, asylums, almshouses and other institutions is about all the legislation that will be accomplished, of that asked for by the state board of health, at this session of the legislature. This bill has passed both houses and has doubtless been signed by the governor and is now a law. When it is contemplated that the legislation asked for was endorsed by the state board of health, by the Medical Society of Virginia and by the profession throughout the state, it seems that the medical profession and the state board of health has but little if any influence with the law makers. It was almost impossible to get any member of the legislature interested in these measures. The best that could be done with several of them was to have them introduced by request. When this is the case, the bill has very little prospect of passing, for unless you can get the influence of some individual member behind a bill, it is usually buried in the committee to which it is assigned."

The conditions described as existing in Virginia are in most particulars those which obtained in all the states previous to reorganization. These conditions, happily, have improved markedly in many of the states in the last few years. If there is one lesson which the medical profession has learned it is that state medical societies, meeting once a year and confining themselves solely to scientific discussion, have little if any influence in legislative or practical affairs. Experience in other states has shown that an active county society, meeting weekly or at least monthly in each county in the state, and taking an active interest in all matters relating to the health of the public and the good of the profession, is the only effective kind of medical organization. When the physicians of Virginia learn this, and profit by it, they will rapidly improve conditions so far as their influence is concerned. There is no state which has a finer individual personnel in the medical profession than has the Old Dominion. The trouble is with her methods and not with her men.

Three Postgraduate Courses by One Society.

The Barbour-Randolph-Tucker Medical Society (W. Va.) has three postgraduate courses in successful operation, one at Elkins, one at Philippi, and one at Belington.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, DIRECTOR.
BOWLING GREEN, KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Sixth Month.

FOURTH WEEKLY MEETING.

Pseudoleukemia.

Pathologic Anatomy: Lymph glands. Chains usually involved, gross appearances, size, density, periadenitis, infiltration. Microscopic changes, lymphadenoma.

Spleen: Microscopic changes. General distribution of lymphomata. Changes in bone marrow and liver.

Symptoms: Enlarged glands, location and rate of growth. General symptoms of anemia. Hemorrhages. "Chronic relapsing fever." Mechanical effects. Circulatory and nervous symptoms. Gastrointestinal disturbances. Cutaneous symptoms. Blood changes.

Addison's Disease.

Pathology: Usual lesion of suprarenal bodies, gross and microscopic. Other morbid changes occasionally found. Abdominal sympathetic, changes in cells and fibers. Deposit of pigment.

Diagnosis: (1) Pigmentation of skin and mucous membranes, (2) anemia, (3) asthenia, (4) feeble heart's action, (5) gastric disorders.

Differentiate from pigmentation of: (1) abdominal growths, (2) hepatic disease, (3) pregnancy, (4) "vagabond's disease," (5) melanotic sarcoma, (6) exophthalmic goiter, (7) syphilitic discoloration.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

RHODE ISLAND State Board of Health, Room 313, State House, Providence, April 2-3. Secretary, Dr. Gardner T. Swarts, Providence.

GEORGIA Eclectic Board of Medical Examiners, Atlanta, April 4. Secretary, Dr. Charles H. Field, 235 Capitol Ave., Atlanta.

ARIZONA Board of Medical Examiners, Phoenix, April 6-7. Secretary, Dr Ancil Martin, Phoenix.

UTAH State Board of Medical Examiners, Salt Lake City, April 6-7. Secretary, Dr. R. W. Fisher, Salt Lake City.

COLORADO State Board of Medical Examiners, Denver, April 7. Secretary, Dr. S. D. VanMeter, 1723 Tremont Place, Denver.

MINNESOTA State Board of Medical Examiners, St. Paul, April 7. Secretary Dr. W. S. Fullerton, 214 American National Bank Building, St. Paul.

CALIFORNIA State Board of Medical Examiners, San Francisco, April 7. Secretary, Dr. Charles L. Tisdale, 1879 Sutter St., San Francisco.

IDAHO State Board of Medical Examiners, Cœur d'Alene. Secretary, Dr. W. F. Howard, Pocatello.

MONTANA State Board of Medical Examiners, the Capitol, Helena, April 7. Secretary, Dr. W. C. Riddell, Helena.

NORTH DAKOTA State Board of Medical Examiners, Grand Forks, April 7-9. Secretary, Dr. H. M. Wheeler, Grand Forks.

FLORIDA Regular Board of Medical Examiners, Ocala, April 13-14. Secretary, Dr. J. D. Fernandez, Jacksonville

NEW MEXICO Board of Health and Medical Examiners, Santa Fe, April 13-14. Secretary Dr. J. A. Massie, Santa Fe.

ARKANSAS Homeopathic Board of Medical Examiners, Little Rock, April 14. Secretary, Dr. V. H. Hallman, Hot Springs.

ARKANSAS Eclectic Board of Medical Examiners, Little Rock, April 14. Secretary, Dr. A. J. Widener, Little Rock.

ARKANSAS Regular Board of Medical Examiners, Little Rock, April 14. Secretary, Dr. F. T. Murphy, Brinkley.

DISTRICT OF COLUMBIA Board of Medical Supervisors, Washington, April 14-17. Secretary, Dr. George C. Ober, 210 B St. S.-E., Washington.

WEST VIRGINIA State Board of Health, Parkersburg, April 14-16. Secretary, Dr. H. A. Barbee, Point Pleasant.

ILLINOIS State Board of Health, Northwestern University Building, Chicago, April 15-17. Secretary, Dr. J. A. Egan, Springfield.

The Carnegie Foundation and Uniformity in Education.

That part of the work of the Carnegie Foundation having for its object the institution of more uniform standards and methods in educational work is of vital importance to those interested in medical education. The lack of uniformity of standards, at present existing, is not confined to medical colleges, however, but is to be found also among academic colleges and high schools. Each college, each state and each section of the country, heretofore, has adopted its own standards without regard to requirements that are in any way national in their scope. There are high schools whose courses extend over periods ranging all the way from one to four years. Some, too, claiming a four years' course, do not strictly belong in that class, as but one or two years at most are devoted to secondary studies, the work in the other years being elementary in character. The same may be said of our colleges and universities; while some give work equal to that given anywhere in the world, others offer but one or two years of actual college work, and still others are but little better than high schools. There is another group, happily becoming smaller each year, which, having no claim to the title of college or university, exists purely from mercenary motives. The result of all this is a confusion of educational standards that has become a standing reproach.

The Carnegie Foundation is doing much to convert this chaos into some semblance of order and uniformity. It has prepared a list of colleges and universities which are such in fact as

well as in name. Although the list does not include state universities and other high-grade privately endowed colleges, fortunately other organizations exist which are working for uniformity of those institutions. The influence of the Carnegie Foundation is well shown by the fact that some universities are making extensive changes in order to meet the requirements. One raised its entrance requirements at once from a three-year to a four-year high school course, while another which was requiring only eight units of high-school work for admission is rapidly changing to the fourteen units required by the foundation.

The influence on medical education is not small. Members of medical faculties of universities which are acceptable to the foundation are eligible to its benefits. The work toward uniformity of high schools and universities will aid much in the establishment of a uniform standard of preliminary education. In the preliminary requirements of medical colleges of a year in physics, chemistry and biology, a knowledge of the standards held by the institutions offering this work is essential. Those working for uniformity in educational standards will certainly wish the Carnegie Foundation all success in the work it has undertaken.

The Training of Physicians.

That the public press is beginning to take an interest in medical education and that it has a fairly clear conception of what a physician's training should be is evidenced by the following extract from a recent editorial in the Pittsburg *Post:*

In no profession should the exaction of due preparation be as rigidly enforced as in the medical. In none can inadequate training work such dire results. Time and cost are secondary matters when human life is the hazard. But properly safeguarded by examinations that examine, and do not accept diplomas as conclusive, six years might do, provided that less was required of the academic and more of the strictly medical. The culture must be symmetrical, but natural aptitude for medical work demands as much as possible of medical education. No compulsion rests on any community to permit men to practice medicine solely as a means of livelihood and not primarily to alleviate or cure the maladies of mankind. When at last the medical student emerges, even after bitter struggles, from the long and rigorous course, he has the immediate return in a confidence not otherwise begotten.

Another Medical School Merger.

From authentic information it is learned that the Minneapolis College of Physicians and Surgeons, the Medical Department of Hamline University, the oldest chartered medical college in Minnesota, and a school which has held an honorable position in medical education in the Northwest, has been merged into the College of Medicine and Surgery of the University of Minnesota. Its ninety students will be transferred to the state university next fall. The amalgamation is the result of a recognition by the faculty of the greater demands of modern medicine which make a larger financial income and a larger equipment absolute necessities. Thus medical education in Minnesota is now centered in the state university and another step toward higher standards has been taken.

Medical Colleges Advance Preliminary Requirements.

The University of Colorado School of Medicine announces that beginning with the course for 1910-11 all matriculants, in addition to a four-year high school course, must have completed two full years of work in a college of liberal arts, including courses in physics, chemistry, biology, English, German and French.

The College of Medicine of Syracuse University has announced that beginning in 1910 or before, it will require for admission two years of work in a college of arts or sciences which is recognized by the Board of Regents of New York.

The College of Physicians and Surgeons of Chicago has decided to require a year in a college of arts or sciences to include work in physics, chemistry, biology and modern languages. This requirement will become effective Jan. 1, 1910.

Indiana Medical College, the School of Medicine of Purdue University, has likewise adopted the preliminary year in physics, chemistry, biology and one modern language, the requirement to begin with the session of 1910.

This makes 26 medical colleges which by 1910 will be requiring two or more years and 57 colleges which will be requiring one or more years of work in a liberal arts college for admission to the study of medicine.

Illinois January Report.

Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examination held at Chicago, Jan. 15-17, 1908. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 29, of whom 23 passed and 6 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Total No. Examined.
Arkansas Industrial University	(1891)	1
Georgetown University	(1896)	1
American Med. Miss. Coll.	(1, 1906) (2, 1907)	3
Illinois Med. Coll.	(1, 1906) (2, 1908)	3
Jenner Med. Coll.	(1906)	1
National Med. University	(1907)	1
Northwestern University	(1, 1899) (1, 1907)	2
Rush Med. Coll.	(1907)	3
Hospital Coll. of Med., Louisville	(1907)	1
Harvard Medical School	(1896)	1
Barnes Med. Coll., St. Louis	(1906)	1
University Med. Coll., New York City	(1890)	1
Medical Coll. of Ohio	(1891)	1
Western Pennsylvania Med. Coll.	(1907)	1
Jefferson Med. Coll.	(1906)	1
College of P. and S., Edinburgh, Scotland	(1905)	1
FAILED.		
Illinois Med. Coll.	(1908)	1
Jenner Med. Coll.	(1907)	1
National Med. University	(1906)	1
Indiana Med. Coll.	(1907)	1
Barnes Med. Coll., St. Louis	(1906)	1
St. Louis Coll. of P. and S.	(1895)	1

Nevada February Report.

Dr. S. L. Lee, secretary of the Nevada State Board of Medican Examiners, reports the written examination held at Carson City, Feb. 5, 1908. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 7, all of whom passed. Three reciprocal licenses were issued at this examination. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
College of P. and S., San Francisco	(1906) 85.8; (1907)	92.2
Cooper Med. Coll.	(1897)	83.6
Denver College of Med.	(1884)	81.9
Harvard Medical School	(1900)	87.1
College of P. and S., New York	(1892)	92.5
Kaiser Wilhelms University, Strassburg, Germany	(1904)	75.4
LICENSED THROUGH RECIPROCITY.		
	Year Grad.	Reciprocity with.
Detroit Coll. of Med.	(1906)	Texas
Barnes Med. Coll.	(1898)	Michigan
Washington University, St. Louis	(1899)	Texas

Utah January Report.

Dr. R. W. Fisher, secretary of the Utah State Board of Medical Examiners, reports the written examination held at Salt Lake City, Jan. 6-7, 1908. The number of subjects examined in was 22; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 7, of whom 4 passed and 3 failed. Three reciprocal licenses were issued at this examination. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Colorado School of Med.	(1906)	75.3
George Washington University	(1906) 82.5; (1907)	82.6
Rush Med. Coll.	(1907)	81.9
FAILED.		
University of Louisville	(1905)	67.5
Creighton Med. Coll.	(1907)	73.5
University of Munich, Germany	(1903)	73.7
LICENSED THROUGH RECIPROCITY.		
		Reciprocity with.
Denver and Gross Coll. of Med.	(1907)	Colorado
College of P. and S., Chicago	(1903)	Illinois
Homeopathic Med. Coll. of Missouri	(1902)	Missouri

Virginia December Report.

Dr. R. S. Martin, secretary of the Medical Examining Board of Virginia, reports the written and oral examination held at

Lynchburg, Dec. 17-20, 1907. The number of subjects examined in was 22; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 70, of whom 53 passed and 17 failed. Eleven reciprocal licenses were granted at this examination. The following colleges were represented:

PASSED. College.	Year. Grad.	Per Cent.
George Washington University	(1902)* (1903)* (1905) 75; (1907) 75, 76.	
Howard University, Washington	(1907)	80
Hospital Coll. of Med., Louisville	(1905)* (1907) 75, 79, 81, 82, 83.	
Baltimore Med. Coll	(1897)*	
Maryland Med. Coll	(1904)* (1907)	80
Johns Hopkins Med. School	(1901)*	
University of Maryland	(1905) 75; (1907)	76
College of P. and S., Baltimore	(1907)	75, 76
University of Michigan	(1870)*	
Missouri Med. Coll	(1896)*	
Long Island Coll. Hosp	(1894)*	
Leonard Med. School	(1905) 75; (1907)	75, 76,77
North Carolina Med. Coll	(1902)*	
University of Pennsylvania	(1864)*	
Med. Coll. of South Carolina	(1905)	87
Meharry Med. Coll	(1897)* (1899)*	
Chattanooga Med. Coll	(1906)	75, 82
University of Virginia	(1904) 84; (1905) 76; (1906) 77; (1907)* (1907) 75, 75, 76.	
Medical College of Virginia	(1906) 80, 80; (1907) 77, 80, 83, 84, 84, 87.	
University Coll. of Med., Richmond	(1907)	77, 81
University of Kief, Russia	(1896)*	

FAILED.		
George Washington University	(1907)	72
Independent Med. Coll	(1898)*	
Baltimore Med. Coll	(1907)	64, 66, 72
Medico-Chirurgical Coll. of Christ's Institution†	(1904)	72
Leonard Med. School	(1905) 72; (1906)	60, 73
Hahnemann Med. Coll., Philadelphia	(1906)	71
University of the South	(1906) 73; (1907)	68, 70
Tennessee Med. Col	(1907)	66
University of Virginia	(1907)	73, 73

* Took oral examination.

† See note regarding this school in THE JOURNAL A. M. A., Oct. 19, 1907, page 1385.

LICENSED THROUGH RECIPROCITY.

College.	Year Grad.	Reciprocity with.
George Washington University	(2, 1905)	Dist. Colum.
University of Maryland	(1903) West Virginia; (1907)	Maryland
Baltimore Med. Coll	(1897)	W. Virginia
Johns Hopkins Med. School	(1904) (1905) (1906)	Maryland
Jefferson Med. Coll	(1896)	Penna.
University Coll. of Med., Richmond	(1905)	W. Virginia
Med. Coll. of Virginia	(1907)	W. Virginia

Wisconsin January Report.

Dr. J. V. Stevens, secretary of the Wisconsin Board of Medical Examiners, reports the written examination held at Milwaukee, Jan. 14-16, 1908. The number of subjects examined in was 8; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 17, of whom 14 passed, 2 were conditioned and 1 failed. The following colleges were represented:

PASSED. College.	Year. Grad.	Per Cent.
Rush Med. Coll.	(1882) 81; (1886) 85; (1887) 90; (1907)	92
College of P. and S., Chicago	(1907)	85
Bennett Coll. of Ecl. Med. and Surg	(1889)	89
Chicago Homeo. Med. Coll	(1893)	85
Bellevue Hosp. Med. Coll	(1893)	86
University of Pennsylvania	(1894)	90
University of Western Pennsylvania	(1906)	79.5
Milwaukee Med. Coll	(1907)	77, 78
Queen's University, Ontario	(1904)	87
Trinity Med. Coll., Ontario	(1900)	88

FAILED.		
Barnes Med. Coll., St. Louis	(1907)	72

CONDITIONED.		
Marion Sims Coll. of Med., St. Louis	(1894)*	
Wisconsin Coll. of P. and S	(1907)*	

* Conditioned in pathology.

Representatives from the following colleges have removed their conditions at this examination:

Rush Medical College	(1900)
Milwaukee Med. Coll	(1907)
Wisconsin College of P. and S	(2, 1907)

Wyoming February Report.

Dr. S. B. Miller, secretary of the Wyoming Board of Medical Examiners, reports the written examination held at Laramie, Feb. 12-14, 1908. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 3, all of whom passed. Three applicants were licensed through reciprocity at this examination. The following colleges were represented:

PASSED. College.	Year. Grad.	Per Cent.
Denver and Gross Coll. of Med	(1907)	84.7
College of P. and S., Chicago	(1907)	75
College of P. and S., Baltimore	(1903)	83.8

LICENSED THROUGH RECIPROCITY.

College.	Year Grad.	Reciprocity with.
Northwestern University Med. School	(1907)	Illinois
University Med. Coll., Kansas City	(1907)	Missouri
Med. Coll. of Ohio	(1888)	Nebraska

Medicolegal

The Prescribing of "Tissue Foods" is the Practice of Medicine.

The Supreme Court of Iowa says that the indictment against the defendant in the case of State vs. Bresee charged, not only in general statutory terms that she practiced medicine without a necessary certificate, but that she unlawfully professed to be a physician and assumed the duties of a physician; that she prescribed and furnished medicine for the sick, and publicly professed to cure and heal, for a valuable consideration. It was shown and admitted that she maintained an office or place in the city of Council Bluffs, Iowa, where she kept and sold to others a preparation known as "Schuessler's Tissue Food," the use of which was supposed or claimed to be a benefit to the sick, but whether it was sold or used as a medicine or remedy for diseases, or as an article of diet, was a matter on which the testimony was in some conflict.

If the witnesses were to be believed, the defendant assured the sick applying to her of her ability to cure them, and professed to be able merely by looking at them to determine the nature of their diseases. Such was her confidence in her skill that she boasted that she had never lost a patient, and declared she would not take any patient whom she could not cure. To those desiring her aid she dealt out what she claimed to be "bio-chemical remedies," or tissue food. On her door she placed a card or sign advertising her business as a "biochemist," whatever that may mean.

According to her statement, the remedies or tissue food dealt out by her were prepared by a distinguished German scientist, Professor Schuessler, who was alleged to have discovered that the human system is made up of fourteen different elements or properties, and that with a sufficient tissue food or remedy for the building up of these elements or component parts all diseases would become curable. Twelve of these ultimate elements and their proper tissue food had been discovered by Professor Schuessler, and, when the other two had been found, "you simply need never die."

These remedies she had in tablet form, and her manner of dealing them out was thus described by one of the witnesses, who had applied to her for this valuable secret of earthly immortality: "She said we should come to her because, while the tablets did the work, they should be administered in just such a form. She would take one bottle, then another, and, when people were sitting around the table, she would not give them all from the same bottle. She would kind of give them in a certain way. They were tablets. She called them 'tissue food,' I believe. I don't know as I ever heard her call them that, but I suppose she was referring to the remedies—the tissue food and the benefits to be derived from the use of these remedies taken in just such form as she prescribed. These remedies were in bottles. My father ate them from plates she put them on, taking same from particular bottles. I think I asked her once how she could know which to give to the different patients. Her only answer was she said she never got mixed up. I don't know whether the manner in which these remedies were to be administered were on the bottles or not."

Another witness said: "I live in this city; am acquainted with defendant; have consulted her for my ailments about two years ago last August. I told her what my condition was. She said she thought she could help me. She gave me some tablets and some paste made from the tablets. The paste was an external application. I took treatment several months, don't remember exactly how long. I think the price was $1

a treatment. My husband paid her. She was paid for the services rendered me. The number of these tablets she gave me varied; sometimes I took more than at other times. She would give me directions how to take the tablets. I took some of them home. She directed me how to take them."

At the close of the testimony the trial court instructed the jury that there was no evidence that the defendant publicly professed to be a physician, or that she assumed the duties of a physician, or that she publicly professed to cure or heal; and that the only question remaining for their consideration was whether during the time covered by the indictment she made a practice of prescribing, or prescribing and furnishing, medicine for the sick. The court also instructed the jury that the defendant had the right to keep and sell Schuessler's Tissue Food and other proprietary medicines, and, if a customer indicated to her the nature of his complaint, she could rightfully give her opinion what remedy she had therefor, and state her judgment as to which was best, and give gratuitous advice as to their use, but that she would have no right to diagnose a case and determine for the purchaser the character of the remedy he should use.

The trial resulted in a conviction, the judgment for which is affirmed by the Supreme Court.

The Supreme Court says that it was argued that to prescribe and furnish medicines is part of duties of a physician, and, as the trial court withdrew from the jury the allegation of the indictment that the defendant wrongfully assumed such duties, the charge that she unlawfully prescribed and furnished medicines necessarily fell with it. The court thinks the reasoning is unsound. The Iowa statute specifically and separately enumerates each of these acts: (a) Publicly professing to be a physician and assuming the duties of the profession; (b) prescribing medicines for the sick; (c) prescribing and furnishing medicine for the sick, and provides that any person making a practice of either shall be held to be practicing medicine within the meaning of the law. It is quite clear from the statute that the legislature did not understand that these phrases are merely different expressions of the same idea. Both expressions appear to have been used in order to bring within the scope of the act both the person who professes to be a physician and assumes the duties of that profession and the person who, while not claiming to be a physician, and not assuming the duties of the profession generally, yet undertakes to prescribe and furnish remedies for the sick and afflicted. There was no error, therefore, of which the defendant could complain in submitting the case to the jury on the theory that the practice of prescribing, or prescribing and furnishing, medicines for the sick is not necessarily included in the charge of publicly professing to be a physician and assuming the duties pertaining to such profession.

Again, the point was made that under the trial court's instructions as to what acts would amount to prescribing and furnishing medicines, and as to the plaintiff's right to sell tissue food, there was no evidence on which a verdict could be upheld. But, on a careful reading of the record, the Supreme Court finds no such lack of testimony in support of the indictment as called for its interference with the finding of the jury.

The instructions were to the effect that, if the accused after diagnosing a case undertook to determine for a sick person applying to her the character of the remedy best suited to his ailment, said act would be prescribing medicine for the sick within the meaning of the statute. The Supreme Court is of the opinion that this definition was correct as far as it went and, if it was not as full, exact, and complete as might be framed, the error was one of which the defendant could not be heard to complain. The fact that the defendant was careful to call the article which she supplied to the sick "food," instead of "medicine," was not at all decisive of the merits of the case. It was evident she was catering to the patronage of the sick who were asking relief from their ills, and, if she listened to their statements, assured them of her ability to help them, and supplied them with her alleged appropriate remedies giving instructions for their application or use, this would seem to come within the definition given by the court, as well as within the ordinary and usual signification attached to the words "prescribing" or "prescribing and furnishing medicines," as they are commonly used and understood. Medicine as defined by Webster is "any substance administered in the treatment of disease; a remedial agent; a remedy." The fact that the substance so employed as a remedial agent may have value as a food, and have a tendency to build up and restore wasted or diseased tissue, will not deprive it of its character as a medicine if it be administered and employed for that purpose.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal.

March 5.

1 *Surgical Treatment of Various Conditions as Influenced by Pregnancy. M. Storer, Boston.
2 Case of Acute Dilatation of the Stomach and Duodenum, in a Moribund Phthisical Patient, Simulating a Terminal General Peritonitis. T. Ordway, Boston.
3 The Boston Medical Library; Its Past, Present and Future. J. F. Ballard, Boston.

1. **Operations During Pregnancy.**—Storer investigates the common belief that pregnancy constitutes a sort of *noli me tangere*, so far as operation is concerned. Of course, any operation that can be deferred without detriment, it is as well to defer, rather than to subject the already strained organism to additional strain. He therefore considers only operations that, if there were no pregnancy, one would not hesitate to say ought not to be deferred, and the bearing of pregnancy thereon. From a critical survey of about 700 papers Storer says: "It is evident that nearly all operations have practically no influence on the course of pregnancy, except to favor its continuance, provided that they are not followed by a septic process, which, by reason of continued high temperature, may cause the death of the fetus and abortion." He tabulates a number of operations performed during pregnancy without affecting it, not only minor operations, but such grave operations as splenectomy, nephrectomy and thyroidectomy. Even when abortion occurs at an appreciable interval, in many of the cases it is open to question whether or not it was caused by the operation. His conclusion is: "An examination of the foregoing list will show that operations of the most varied nature can be performed with very little danger of interrupting pregnancy, with two exceptions; in 9 operations for vesicovaginal fistula abortion followed in 4, and in 25 operations for crural hernia it took place six times; just why, in the latter case, it is difficult to see." Storer confines himself to the consideration of operations on the uterus and its appendages and the neighboring parts. The first consideration is what effect the condition calling for intervention will have on the mother and fetus if left alone. It is well to repress reflex excitability by morphin or bromids before operation, and to combat wound infection, if it occurs, with cold baths and antipyretics. He discusses in detail various conditions calling for interference, and reports five cases of his own, of operation during pregnancy, the fourth and fifth being of special interest. In the fourth case, pregnancy was denied and not established, and operation was to remove an intrauterine fibroid. This was done, but a three months' pregnancy was found. The patient did well until the eighth day when constitutional symptoms occurred. The vaginal examination showed a rupture at the seat of the myomectomy with the lower half of the fetus in the abdominal cavity tightly gripped by the uterine wall. Storer emphasizes the following points: The difficulty of diagnosis, the danger of infection by a gauze drain, the mistake in closing the uterine wound with catgut, the danger, if miscarriage occurs, of the line of least resistance being toward the abdominal cavity rather than toward the vagina, the necessity of prompt intervention in case of danger signals, and above all, the fact that the tumor would much better have been left alone. The fifth case was also one in which pregnancy was denied, and it was taken to be a probable left salpingitis. In dilating the uterus preparatory to

curetting, the cervix gave way. A gauze covered forceps passed in entered for four inches, and on the supposition that the uterine wall had been perforated the abdomen was opened, when a three months' normal pregnancy was found, with nothing the matter but left lateroversion, which had been mistaken for the tube. The patient was promptly relieved of her symptoms and that, strange to say, without miscarriage taking place.

Medical Record, New York.

March 7.

4 Opportunities of a Great Medical Society. T. E. Satterthwaite, New York.
5 Report of Three Years' Work at the Sea Breeze Hospital for the Treatment of Surgical Tuberculosis in Children. L. W. Ely and B. H. Whitbeck, New York.
6 *New Facts Regarding Heart Disease. Wachenfeld, Bad Neuheim, Germany.
7 "The Flowers That Bloom in the Spring," with Variations and Digressions. W. B. Konkle, Montoursville, Pa.
8 *Plea for the Correction of Uterine Displacements. F. H. Hancock, Norfolk, Va.

6. **Heart Disease.**—Wachenfeld gives reasons for rejecting the theory of work hypertrophy, or increase of the ability of hypertrophied muscle to perform work. Hypertrophy of the cardia should never be considered as a source of increased power. In like manner, the theory of dilatation is discarded because it would entail a negative pressure. Such a pressure can not exist in any portion of the circulatory apparatus, since a vacuum in the circulatory system is not to be thought of. Extension of the limits of cardiac dulness is always due either to hypertrophy or to a change in the position of the heart. Postmortem hearts, whose cavities seem to be dilated, are an illusion, due to the fact that cavities whose walls are gaping always appear larger than those that collapse. Besides, normal hearts may be of different dimensions, one being even more than double the size of another. As regards valvular disease, it must not be forgotten that such lesions never develop in an instant. It is impossible for the blood to regurgitate through a diseased valve in quantity to have any influence on intraventricular pressure. Could it do so it would follow that in due course the relation between the quantity of blood in the pulmonary and systemic systems would be altered very considerably. The conditions that are found accompanying valvular diseases are not caused by the trouble at the valve, but are the consequences of abnormal metabolism induced by the slowing of the blood current. Valvular lesions which are not sufficient to produce a very material slowing of the circulation are never dangerous to life. The changes that really take place are due to interference with metabolism of the heart muscles. The treatment, then, consists in a strong stimulation of general metabolism by means of thermal baths, massage, and suitable diet, acting through the lymphatics as the carriers of cell nourishment, with the addition of digitalis and rest in bed, which help to increase to a maximum the period of rest between the contractions and to retard the heart's action.

8. **Uterine Displacements.**—Hancock, as the result of a study of 600 pelvic examinations, finds that out of 147 retroversions only 40 were accompanied by discernible perineal or cervical tears, and that out of 183 displacements only 51 were associated with a relaxed vaginal outlet. He deduces from this that deficient perineal support is not the most important factor in their production; the ligaments can not be left out of account. He does not believe that tears should be let alone, but he does believe that the symptoms directly produced by them have been greatly exaggerated. Endometritis and pain and usually leucorrhea are almost invariably associated with a displacement, and sterility is often due thereto, though not because of mechanical obstruction, as was formerly supposed, but in consequence of the attending endometritis. In Hancock's opinion, therefore, all these cases should receive treatment.

New York Medical Journal.

March 7.

9 *Psychiatric Expert Evidence in Criminal Proceedings: Its Imperfection and Remedy. G. W. Jacoby, New York.
10 *Need of Care for the Convalescent from the Hospital Standpoint S. T. Armstrong, New York.
11 Brief Study of the Prostate with Reference to the Curability of Gonorrhea. A. L. Wolbarst, New York.
12 *Operative Tendencies in Modern Obstetrics. A. Stein, New York.
13 Gall-stone Disease and Its Surgical Aspect. F. Hawkes, New York.
14 Diagnosis and Treatment of Benign Tumors of the Rectum. H. A. Brav, Philadelphia.
15 *Colorimetric Analysis of the Saliva, with Clinical Significance. B. R. Le Roy, Athens, Ohio.

9. **Psychiatric Expert Evidence.**—Jacoby considers the existing confusion in our method of utilizing expert testimony, and proposes as a remedy the establishment of a permanent class of forensic physicians, to be public officials, not of the city or county, but of the state, having a permanent tenure, freed from all political influence and paid by the state, neither receiving nor accepting instructions from anyone in the composition of the expert written opinion by them uttered at call of court. Their qualifications should be a certain minimum age limit, a special training in legal medicine and legal psychopathology, with clinical psychiatric work in a state hospital, and a diploma on special examination by the state board of medical examiners, conferring a special title of physician to the courts. The appointment should be made by the state from the number of successful candidates. He considers the ethical aims of expert testimony and urges the duty of the public prosecutor as having for its object, not a conviction, but the discovery of the absolute truth. Jacoby considers the hypothetical question hardly ever necessary. He fully appreciates the opposition that this plan is likely to encounter, as voiced in a statement of a judge of the Supreme Court of New York, to the effect that this idea of official witnesses is a departure from established English and American principles of jurisprudence, and even if an improvement, is radically different from the principles that have given rise to our free institutions. To this Jacoby replies that it places the expert above all party lines and in accordance with the high conceptions of expert scientific duty, and that some such measure ought to be adopted, even though the ideas of American and English jurisprudence would perforce have to adapt themselves to the progress of the times. Many countries, notably Germany, have already gone to some extent in this direction.

10. **The Convalescent.**—Armstrong urges that proper hospital treatment for convalescents should be provided to restore the patient as expeditiously as possible to physical efficiency. For economic reasons the treatment of convalescence should be separated from that of acute conditions. But for the same reasons a hospital for convalescents may be associated with one to treat chronic diseases. Urban accommodation for convalescents is impracticable and undesirable, and accessible suburban sites should be selected to locate hospitals for convalescents. Convalescent hospitals should be constructed at moderate cost, should provide for patients likely to require a long as well as a short duration of convalescence, should be equipped with all necessary apparatus, and the patients should be subjected to proper medical supervision. A committee or society to advocate convalescent hospitals should be formed to cooperate with a charity organization society, or association for improving the condition of the poor, or state board of charities. Such a society in England has accomplished good results.

12. **Operative Obstetrics.**—Stein discusses the various measures designed for the replacement of embryotomy: Cesarean section, dilatation of the cervix with hard and soft dilators, Dührssen's operation, which represents a real advance in modern operative obstetrics and which he briefly describes, and also the operations of symphyseotomy and pubiotomy. He concludes that a new science of obstetrics has developed in the last two decades, due chiefly to the adoption of modern surgical principles, and that obstetrics no longer fails to keep pace with the advances in the other branches of medicine.

15. **Analysis of the Saliva.**—Le Roy describes the methods of analysis of saliva, colorimetric and qualitative. The smallest quantity of reagents compatible with color reaction is to be used and the test solutions are usually 5 per cent. in strength. He details the method of testing for sulphocyanids, ammonia, chlorids, oxalic acid, urea, formaldehyd, acetone, sodium, potassium, calcium, nitrites, lactic acid, opium and morphin

(the latter two tests are useful in detecting drug addiction), the rosolic acid test paper for acids or alkalies and proteids. He then discusses the clinical significance of the finding of these various substances.

Medical Fortnightly, St. Louis.

February 10.

16 The Opsonin Theory and the Probable Future for Bacterial Vaccines. L. H. Warner, Brooklyn, N. Y.
17 Drug Medication Regnant in Therapeutics, the Key to Exact Medical Science. J. Clements, Wichita, Kans.
18 A Useful Iodo-Proteid in the Treatment of Tertiary Syphilis. J. R. Thrasher, Indianapolis.
19 *Control and Prevention of Tuberculosis. G. Homan, St. Louis.

February 25.

20 Northern India. R. G. Eccles, Brooklyn, N. Y.
21 Evolution of Man Is Evolution of Nature. A. S. Ashmead, New York.
22 *The Falsetto or Eunucoid Voice. E. E. Clark, Danville, Ill.
23 Appendiceal Perforation. C. H. Shutt, St. Louis.

19. This article will be dealt with in the Department of Medical Economics.

22. **Eunucoid Voice.**—Clark discusses this condition, not of frequent occurrence, but a true affliction when it occurs, if for no other than esthetic reasons, though in many cases esthetic conditions have a good deal to do with the economic success of the individuals. He asserts that the eunucoid voice does not mean abnormal sexuality, for in all cases the genital organs are found normal. Clark says that treatment, which is usually effective, consists in a rigid course of vocal gymnastics and monotone exercises with development of a proper method of breathing, especially by the cultivation of the abdominal respiration. It is well to assure the patient as to his prospects of improvement. His directions are as follows: Begin by singing a high note and have the patient repeat it, then sing on down the scale until he has reached his lowest register, then have him keep the voice at this pitch and repeat the low notes in a loud forced expiration for ten or fifteen minutes. Have him read aloud in a deep register in a monotone. The low register for reading can be secured by singing his way down, then continuing in the low tone. Have him refrain from all unnecessary use of the voice, except when he is practicing his vocal gymnastics, and let him practice reading in the low tones in the evenings and any other time possible, and soon he will be using the deep masculine tones unconsciously. The family practitioner, by attention to this matter, which is commonly accepted as an unavoidable misfortune for which it is useless to seek relief, may here enlarge his sphere of usefulness.

American Journal of Obstetrics, New York.

February.

24 *Influence of the Central Nervous System in the Causation of Uterine Hemorrhages. H. Ehrenfest, St. Louis.
25 Phlegmonous Sigmoiditis—Resection—Recovery. I. Olmstead, Hamilton, Ont.
26 Intrapartum Vaginal Ovariotomy for Ovarian Cyst Obstructing Labor. Report of Case. K. I. Sanes, Pittsburg, Pa.
27 *Scopolamin-Morphin Anesthesia in Gynecology. E. Ries, Chicago.
28 Vesicouterine Fistula. W. H. W. Knipe, New York.
29 Obliterating Thrombosis of the Ovarian Artery. H. Grad, New York.
30 *Normally There Should Be No Hemorrhage from the Placental Site at the Time of Delivery. J. G. Drennan, St. Thomas, Ont.
31 *Neurasthenia in Its Relation to Pelvic Symptoms in Women. E. A. Weiss, Pittsburg, Pa.
32 *Curettage and Puerperal Sepsis. C. E. Ruth, Denver.
33 Cases Illustrating Common Mistakes in Gynecologic Diagnosis. W. S. Smith, Baltimore.

24. **Uterine Hemorrhages.**—Ehrenfest says that any acceptable explanation of the exact mechanism by which an impulse originating in the central nervous system—a mental cause—or one transmitted from the central nervous system—a reflex cause—could result in the sudden appearance or the sudden cessation of a uterine hemorrhage must be limited to the following physiologic and histologic facts: 1. The blood circulation in the uterus in a very marked degree stands under the influence of the vasomotor system, the uterus being an erectile organ. 2. The uterine musculature shows rhythmic spontaneous contractions. 3. Changes in the tonus of both the uterine musculature and the vessel walls are subject to the influence of the central nervous system. 4. Uterine contraction at times (as when the pulse reaches the uterus by way of the nervi erigentes) is accompanied by active vasodilatation. 5. The sudden cessation of a menstrual flow or a temporary amenorrhea developing as the result of an emotion or in the course of certain diseases of the nervous system, often can not be due to organic lesions in either uterus or ovaries. 6. The sudden appearance of a hemorrhage as the result of a mental shock can not be explained, like the menstrual flow, as immediately due to certain degenerative processes in the walls of the endometrial vessels. 7. A sclerosis of some of the arterial vessels must be considered a physiologic condition of the multiparous uterus. In view of the conditions prevailing at the time of the beginning of the menstrual flow we seem forced to assume that the local blood pressure in the uterus at times may fall and rise independently of the general blood pressure. Such an assumption is entirely in harmony with physiologic facts. A local increase of the blood pressure in the uterus, Ehrenfest thinks, will result from any tonic contraction of the uterus slight enough not to cause a compression of the arteries, but strong enough to effect a cessation of the rhythmic contractions of the uterus. Such a contraction is probably better termed a temporary increase of the uterine tonus. What will be its effect? The compression of the thinner walled veins will interfere with the defluxion of the venous blood. Since the arteries remain unaltered, a congestion results which will be augmented by the absence of the rhythmic contractions which certainly help to propel the venous blood. In this way a passive hyperemia is produced. The hyperemia must show its most pronounced effect in the capillaries of the endometrium for two reasons: 1. The capillary system of the endometrium in development greatly outranks the two other systems, namely, the subperitoneal and the intramuscular (Werth, Freund), as the largest portion of the arterial blood entering the uterus passes through the capillaries of the endometrium. 2. While the capillaries of the two latter systems, on account of their situation between the muscle fibers, are directly compressed by the contracting muscle, such a compressing effect is not exerted on the capillaries lying in the mucosa. As the result of the passive hyperemic condition and the locally increased blood pressure, therefore, the endometrial capillaries must become dilated and finally will rupture. This explanation seems also applicable to menstruation. The passive hyperemia, just described as the result of an increased tonus of the uterine musculature, here would be preceded by the active hyperemia of the premenstrual stage, which in itself causes a locally increased blood pressure with a passive dilatation of the capillaries. This theory of the mechanism by which certain uterine hemorrhages are started is in harmony with, and is actually supported by, the observation that uterine hemorrhages are common in the presence of all those anomalies which (a) cause an increase in the general blood pressure; (b) produce an active or passive hyperemia of the pelvic organs; or (c) impair the integrity of the endometrial capillaries. The theory offered in this paper explains, in an apparently satisfactory manner, the appearance of a uterine hemorrhage (including normal menstrual flow), the sudden cessation of an existing hemorrhage, an amenorrheic condition, menorrhagia, and finally certain forms of uncontrollable or intractable metrorrhagia.

27. **Scopolamin-Morphin Anesthesia in Gynecology.**—Ries concludes from his experience that scopolamin-morphin anesthesia is, with certain restrictions, of great advantage to the patient as well as to the operator, and that its judicious use can be safely recommended.

30. **Placental Attachment.**—Drennan points out that the villi of the fetal placenta are inserted into the interglandular spaces of the maternal placenta so that the capillaries of the one do not come into direct contact with those of the other, and that the fetal and maternal blood do not mingle, but that an osmotic interchange takes place, as in the lungs, where the blood does not come directly into contact with the air. The cells lining the uterine glands secrete a mucus, and this, with the secretion from a breaking down of the lining cells of the interglandular spaces, is interposed between the maternal and fetal portions of the placenta. At the time of delivery this, if the condition is normal, is readily absorbed, and the villi of the

chorion should slip out without any vascular rupture from the interglandular spaces. But if adhesions have formed during pregnancy, then either rupture of a portion of the villi, which will be left behind adherent to the interglandular space, will occur, affording an insignificant hemorrhage, or the interglandular space wall, with the uterine capillary walls, will be torn, and serious hemorrhage will result.

31. **Neurasthenia.**—Weiss concludes that neurasthenic pelvic symptoms in women frequently exist without pathologic changes in the pelvis; that a careful differentiation between neurasthenia and real morbid anatomy must be made before deciding on the treatment; and that this form of neurasthenia is not only unimproved but frequently aggravated by surgical treatment.

32. **Curettage and Puerperal Sepsis.**—Ruth argues against the use of the curette in septic cases.

Annals of Surgery, Philadelphia.

February.

34 *Ludwig's Angina. T. T. Thomas, Philadelphia.
35 *Experimental Surgery of the Lungs. S. Robinson, Boston.
36 *Should Cholecystitis and Cholelithiasis Be Any Longer Considered Medical Affections, and What Are the Usual Consequences of So Treating Them? C. B. G. De Nancrede, Ann Arbor, Mich.
37 *Value of the Differential Leucocyte Count in Acute Appendicitis. A. H. Noehren, New York.
38 A New Technic for Dealing With the Appendix Stump. C. W. Barrett, Chicago.
39 Obstruction of the Internal Urinary Meatus by Folds of Mucosa. W. Jones, Portland, Ore.
40 *Postoperative Roentgen-Ray Treatment of Malignant Disease. R. H. Boggs, Pittsburg, Pa.
41 *Endoaneurismorrhaphy (Matas) in the Treatment of Traumatic Aneurism of the Femoral Artery. J. M. Elder, Montreal.
42 Treatment of Paralytic Talipes Calcaneus by Astragalectomy and Backward Displacement of the Foot. R. Whitman, New York.
43 *Trough-Suspender Forearm Sling. W. C. Wermuth, Chicago.
44 Partial Resection of Upper and Lower Maxillæ for Congenital Deformity of the Face. R. T. Morris, New York.

34. **Ludwig's Angina.**—This is the first instalment of an article in which Thomas discusses the history, etiology and pathology of Ludwig's angina, discussing the various views that have been presented. In Thomas' opinion, one of the basic causes of confusion lies in the obscurity associated with the cause of death, whether it results from septic intoxication or from invasion of the air passages. The author gives his reasons for believing that practically all deaths in this disease are due mainly to interference with respiration.

35. **Experimental Surgery of the Lungs.**—Robinson directs attention to the consideration of the avoidance of lung collapse in operations on the pleural cavity. Fatal collapse must be avoided, either by not allowing air to enter between the visceral and parietal layers, or by keeping the lung artificially inflated. The latter may be effected by negative pressure applied to the outer surface or by positive pressure applied to the inner aërating surface. The last mode is the one adopted by Robinson, and he describes an apparatus of his own construction which has proved most satisfactory. He reports thirty experimental operations, which he considers show a lower death rate than has hitherto been recorded. He recapitulates the eight objections raised by Sowerbrook against positive pressure respiratory apparatus for experimental surgery when the animal's recovery is desired, and answers them in detail.

36. **Cholecystitis and Cholelithiasis.**—De Nancrede answers the question asked in his title by stating that there are many serious hepatic and biliary conditions that can be met properly only by the use of the knife. If these conditions must be recognized early to secure the best results, a diagnosis often must be reached by discarding the group of symptoms usually relied on, and reaching the correct conclusion by a careful analysis of the symptoms, viewed in the light of anatomy, physiology and modern pathology. In certain rare cases, as already said, only an exploration will decide the question.

37. **Leucocyte Count in Appendicitis.**—Noehren considers blood examination in acute appendicitis of great value in determining whether or not immediate operation is indicated. The degree of leucocytosis is too variable, and the relative disproportion between percentage of polynuclears and the degree of leucocytosis, while reliable in the majority of cases, is of little practical value. The percentage of polynuclears alone is more reliable than either and is easily made; 90 per cent. or more demands immediate intervention; below 78 indicates a mild process, and intermediate relations *pro rata*.

40. **Postoperative X-Ray Treatment.**—Boggs urges the early referring of malignant cases for postoperative *x*-ray treatment, instead of waiting until recurrence has taken place. The site of operation and the adjacent lymphatic glands should be early saturated with radiation. In prescribing mercury for syphilis great fear of producing salivation would not induce us to prescribe 1/100 of a grain when two grains were indicated. The same is true in treating carcinoma with the *x*-ray. Inadequate treatment not only is useless, but Boggs believes stimulates tissue growth, while sufficient radiation retards and destroys new growths.

41. **Endoaneurysmorrhaphy (Matas).**—Elder reports a case of Matas' operation in a traumatic aneurism of the femoral artery, and concludes that this operation, both in its rationale and its results, is certainly much preferable to the risks of the ligature, which can always be resorted to should suture fail.

43. **Forearm Sling.**—Wermuth describes a sling made in three pieces. The main or body piece is formed out of a square piece of strong muslin cloth, with dimensions 18 by 18 inches, once folded together open above, sewed together at one end, rounding its lower border, giving to this body piece the form of a trough with one end open. The open edges are reinforced by a 1½-inch hem. To the main or trough piece are sewed two suspensory slings, each 42 inches long, 3½ inches wide at the proximal end, where they are stitched to the upper margin of the inner or body wall of the trough piece. These slings taper to a 2½-inch wide distal end. The attachment of these sling pieces to the body piece, the one 3 inches from the elbow end and the other flush with the free, or carpal, end, is likewise reinforced by 1½-inch hem. Through this reinforced attachment on each side is made an opening, a buttonhole, also reinforced, and large enough for the distal extremity of the suspensory sling to pass through. Likewise, in the upper margin of the outer wall of the body piece, two buttonholes are made, directly opposite the former two, to receive these distal ends. The distal ends pass through the buttonholes of the walls of the trough piece, and are drawn taut as occasion demands, securely locking and fixing the arm sling. If necessary, the inclination or declination can be changed by shortening the pin fixation on the sling and elongating that of the other side to a corresponding degree. By reversing or turning the body piece of the sling inside out, it adapts itself to either side of the body, so that the suspender sling wall is in juxtaposition with the body.

Indiana Medical Journal, Indianapolis.

February.

45 *Facts Regarding Hydrophobia. T. V. Keene, Indianapolis.
46 Seventeen Years of Tuberculin Diagnosis and Treatment. T. Potter, Indianapolis.
47 *The Indiana Movement. J. N. Hurty, Indianapolis.
48 In Memoriam, Nicholas Senn. J. A. McDonald, Indianapolis.

45. **Hydrophobia.**—Hydrophobia may develop in a community through the introduction of an infected dog, a year elapsing before the animal presents symptoms. It may develop at any time during the year. The average incubation period in man is about fifty days. Differentiation has to be made from strychnin poisoning, tetanus and hysteria. Keene particularly cautions against killing a dog that has bitten any one; it should be kept for observation. Not all persons bitten by a rabid dog are infected. All animals known to be bitten and all stray curs should be killed and all dogs should be muzzled for eighteen months on appearance of infection in the community. Chloral and hyoscin, in rather large doses, are the most trustworthy drugs. As regards the Pasteur treatment, each case is a law unto itself in the matter of dose, depending on the length of time between infection and treatment, age, nervous temperament, nature and location of bite, and manner of reaction to each treatment. An average of twenty-one days is required to complete a series of Pasteur treatments.

47. **The Indiana Movement.**—Hurty says that education does not and can not eliminate degeneracy. The only way is to

prevent the creation of degenerates. He refers to the Indiana marriage law on this subject, and gives the text of a new bill authorizing operative measures for the prevention of procreation by degenerates. Vasectomy is the operation approved.

Montreal Medical Journal.

49 Biblical Medicine and Hygiene. H. B. Murphy, Lansdowne, Ont.
50 Machine for the Forcible Correction of Deformed Feet. J. A. Luiter.
51 *Tabes Dorsalis and Its Re-educative Treatment. C. K. Russell, Montreal.
52 Epidemic Cerebrospinal Meningitis. J. G. Browne, Montreal.
53 *Renal Tuberculosis. R. P. Campbell, Montreal.
54 *Infantile Scurvy. W. F. Hamilton, Montreal.

51. **Tabes Dorsalis.**—Russell discusses the various etiologic theories of tabes and considers especially Edinger's exhaustion theory, of which he approves. The cells may be congenitally debilitated, or they may become so in consequence of an abnormal amount of work, or because owing to impairment by some circulating toxin the work required of them is relatively too great. The toxin, in most cases, is syphilitic in origin, and the neurons normally most active and most constantly at work are those which principally suffer, namely, the sensory nerves from the muscles that take an important part in the regulation of muscular contraction. Naturally, these are chiefly in the lower extremities, but instances are given showing that this theory accounts for occasional affection of the upper extremities and explains skin, mucous membrane and eye symptoms, especially the Argyll Robertson pupil, bladder disturbances, etc., consequently it is no longer necessary to consider every tabetic as a syphilitic. Trauma, exposure to cold and wet, excesses, may all be predisposing causes, and the exacerbations following exhausting illness are thus explained. The relation of tabes to sex, also, thus becomes explicable, as well as the relative immunity of certain colored races. For treatment, rest and watchfulness against over-exertion, improvement of the general condition and metabolism, emptying of the bladder every three hours, the correction of errors of refraction, and the use of colored glasses in a strong light, are recommended. Massage and faradic stimulation of muscles on alternate days, to stimulate metabolism in lieu of exercise, are required. He then describes the exercises, consisting of the practice of various movements by ataxic limbs, at first under the guidance of the eyes. The exercises, which should be undertaken not oftener than twice a day, are practiced, respectively, in the recumbent and sitting positions and by walking on a specially figured strip of linoleum.

53. **Renal Tuberculosis.**—Campbell reports 12 cases, 3 in women, 9 in men, from which he concludes that 10 at least were cases of primary renal tuberculosis. He considers primary tuberculosis of the bladder rare. While renal tuberculosis is, in his opinion, clinically primary, pathologically the true primary focus may lie in some obscure lymph gland. The early diagnosis of unilateral, primary renal tuberculosis should render prognosis favorable.

54. **Infantile Scurvy.**—Hamilton says that the anemia, the restlessness or fretfulness when handled, the presence of blood in the urine, and unaccountable blood in the feces, should lead one to look carefully at the food the child is taking and should make one suspicious of early scurvy. If these cases do not develop into pronounced scurvy, the explanation may possibly lie in individual resistance.

Journal of the Medical Society of New Jersey, Orange.

February.

55 Value of the Leucocyte Count as a Diagnostic Aid. J. W. Martindale, Camden.
56 *Diagnosis of Chronic Endocarditis Prior to Disturbance in Compensation. L. G. Rowntree, Baltimore.
57 Treatment of Cancer by the *X*-rays. G. E. Pfahler, Philadelphia.
58 Sudden Death in Early Childhood. A. Stern, Elizabeth.
59 Hygiene of the Oral Cavity. H. H. Sherk, Camden.

56. **Chronic Endocarditis.**—Rowntree discusses the importance of routine in order to secure accurate diagnosis. He then discusses separately the physical examination for mitral incompetency, mitral stenosis and aortic regurgitation. True organic mitral regurgitation conforms to the following picture: 1, Soft blowing systolic murmur, best heard at apex, but transmitted to axilla and to angle of left scapula; 2, accentuated pulmonic second sound; 3, enlargement of the heart—apex displaced downward and to the left, so that inspection and auscultation afford the greatest information in this condition. In mitral stenosis the chief clinical findings are (1) a presystolic thrill, rough grating, felt in fourth or fifth interspace inside nipple line, ending in (2) a sudden, snappy shock, synchronous with ventricular systole; (3) a rough presystolic murmur heard in and usually limited to the area of thrill, ending in (4) a loud, snappy first sound at the apex; (5) accentuation of second sound in pulmonary area. Aortic incompetency presents the following group of signs: 1, The greatly displaced apex beat; 2, a long drawn diastolic murmur heard at the base of the heart and best in the aortic area; 3, pulsating vessels in the neck, and 4, the water-hammer pulse of Corrigan.

Texas State Journal of Medicine, Fort Worth.

February.

60 *The Unsuspected but Dangerously Tuberculous Cow. E. C. Schroeder.
61 Dermoid Cyst Complicating Labor. W. M. Yater, Cleburne.
62 Cerebrospinal Meningitis. M. L. Graves, Galveston.
63 Foreign Bodies as Etiologic Factors in Appendicitis. F. S. Barnes, Trinity.

60. **The Tuberculous Cow.**—Schroeder points out that the dangerously tuberculous cow may long retain the appearance and general semblance of good health. The present methods of detecting the presence of the bacillus are too crude to insure positive results unless the bacilli are numerous, wherefore he insists on the necessity of employing the tuberculin test. The danger from tuberculosis among dairy cows is not confined to the use of milk as a beverage. It is transmitted to other articles of food prepared with it, especially butter. The public must be aroused to its obligation, if not for its own sake, at least for that of children, among whom the frequency of tuberculosis due to milk from tuberculous cows is considerable. After years of observation, the tuberculin test has been shown to be a more nearly infallible means for diagnosing tuberculosis than any diagnostic measure for other diseases of men and animals. Our dairy herds can be cleaned of tuberculous cows by the proper application of the tuberculin test and the segregation of all reacting animals.

Northwestern Lancet, Minneapolis.

February 15.

64 Inguinal Hernia—Types of Operation—Results in 1,652 Cases. E. S. Judd, Rochester, Minn.
65 Present Status of Smallpox in Minnesota. H. M. Bracken, St. Paul.
66 *Medical Fees. S. M. Hohf, Yankton, S. D.
67 *Appendicealgia or Non-inflammatory Diseases of the Appendix. F. E. Walker, Hot Springs, S. D.

March 1.

68 Care of Premature Infants, with Special Reference to the Use of Home-Made Incubators. J. C. Litzenberg, Minneapolis.
69 President's Address to Hennepin County (Minn.) Medical Society. J. E. Moore, Minneapolis.
70 From a Business Standpoint. A. D. Holdale, Tracy.
71 Hyoscin-Morphin-Cactin Anesthesia. W. P. Lee, Fairfax.

66. Abstracted in THE JOURNAL, March 14, 1908, page 907.

67. **Non-Inflammatory Disease of the Appendix.**—Walker describes a condition of pain in the abdomen usually referable to the right iliac region, due to a pathologic condition of or within the appendix, and unaccompanied with an increased pulse rate or rise in the temperature. The etiologic conditions are given as congenital deformities of the appendix, such as twists, shortened mesentery, absence of a mesentery, angulation, flexions, attachment of the distal end of the appendix to the peritoneum, mesentery, or other abdominal organs, narrowed lumen, contractions, foreign bodies within the appendix, constipation, digestive disturbances, overwork, over-exercise, especially of the right side, over-indulgence in food, injuries and neurosis. A classification of 300 patients operated on for appendicular conditions gives 34, or 11.33 per cent., of subjects coming within this class, in which there was absolutely no clinical evidence of trouble other than continued pain. The types are divided into: 1, Those with constant but mild pain; 2, constant pain with frequent exacerbations; 3, periodical pain. The author admits the likely possibility of

the condition being an early stage of appendicitis, and considers that it fully justifies removal of the appendix at the earliest opportunity.

Bulletin of the Johns Hopkins Hospital, Baltimore.

February.

72 *Conditions Which Have Influenced the Development of American Medicine, Especially in the Last Century. W. H. Welch, Baltimore.
73 *Diagnosis and Treatment of Neurasthenia. J. K. Mitchell, Philadelphia.
74 *Abscess of Bone Caused by an Intermediate Bacillus (B) Allied to *B. Paratyphosus*. F. G. Bushnell, Brighton, Eng.
75 *Sudden Death in Pleurisy with Effusion Due to Change of Position. W. J. Calvert, Columbia, Mo.

72. This article takes up all the essential points dealt with in a similar article published in THE JOURNAL, Jan. 4, 1908, page 1.

73. **Neurasthenia.**—Mitchell refers to the fact that recognizable changes occur in the nerve centers from fatigue, and suggests that some of the conditions in neurasthenia may be consequent on functions being so continuous or severe as not to allow of proper repair, and that this is a cumulative effect. The subjective symptoms may be divided into the following groups: Fatigue symptoms, irritable weakness, disorders of the will and psychic depression, with a host of subsidiary or secondary symptoms. The group symptoms overlap and run into one another, but they constitute the positive pathognomonic signs. He discusses the differential diagnosis from locomotor ataxia, early paralytic dementia and hysteria. The indications for treatment are to repair the damages caused by over-exertion, to get rid of the depression, and to combat a host of lesser but distressing symptoms from asthenopia to constipation, and last and most serious to strengthen the will and to control and change the mental habit. It is desirable, though not absolutely necessary, to success, that the patient be convinced that a cure will be effected. The disability of will and decision is the most trying symptom to those who have not lost their self-respect. To break a bad habit a good one must be substituted. When improvement is well under way is time enough for reproof and exhortation; until then let there be advice and encouragement and helpful counsel. A written statement thereof is often especially valuable to the patient. In the after-treatment patients should be gradually trained into hard physicial conditions.

74. Published in *British Medical Journal* and *Lancet*, Dec. 21, 1907.

75. **Sudden Death in Pleurisy.**—Calvert discusses sudden death in pleurisy due to change of position, and arrives at the following important conclusions: Sudden death in some cases of pleurisy with effusion, on changing position, is preceded by dyspnea, irregular pulse, and general anemia caused by collapse of the venæ cavæ and heart; and is due to failure of the venous congestion to compensate the constant variable hydrostatic pressure. Clinical conclusions he summarizes as follows:

1. Dependent as it is on one physical factor (pleural pressure) the venous pressure affords a reliable sign of the intrapleural pressure. Changes in the degree of venous pressure show the activity of the lesion producing the effusion, either increasing or decreasing, especially after the walls of the cavity are stretched. Maximum venous pressure heralds the approach of a period of unstable venous compensation, or the beginning of a failure of the veins to compensate. During this period the patient is exposed to attacks of syncope, sudden death on changing position, or to sudden death from a rapid rise of factor of the pleural pressure.

2. During this period the necessary precautions should be taken to prevent unnecessary change in the position of the patient—a horizontal position should be maintained.

3. Maximum venous pressure is a signal for immediate interference—tapping.

4. The importance of the venous pressure suggests a general application, by clinicians, of the present methods for measuring venous pressure, to all cases in which venous congestion is present, for the purpose of determining the range of pressure in each pathologic condition.

5. In cases of sudden death, the clinician should remember the success following continued stimulation of the heart in experiments in physiologic laboratories, when the heart has failed; and should apply, over a number of hours, and so far as possible, the same measures to the human heart. By so doing, a portion, at least, of these cases might be saved. The first step is to reduce the pleural pressure and increase the venous. Turning the patient on the affected side and nearly in a perpendicular position, would serve to transfer the variable from the cava to the outside wall of the pleural cavity and to add to the venous pressure the column of blood in the large veins. This change in pressure would add much to the effective force of the venous pressure, and might, with the aid of the stronger heart stimulants, revive the heart. Artificial respiration would, at least, slightly change the small amount of blood which might be forced through the lungs to the left heart. At this stage, arterial blood would materially aid in further reviving the heart. If by these means the heart begins to act feebly, the next step is to remove a little fluid from the pleural cavity, a few cubic centimeters. If too much fluid is removed the heart will not be able to do the increased work. As the heart is better supplied with blood and increases in strength, more fluid can be withdrawn. Repeated withdrawal of small amounts of fluid, until the venous pressure falls below the maximum pressure, is indicated; after this the heart is better supplied with blood and more capable of performing its increased work. Later the fluid may be withdrawn in larger amounts.

Louisville Monthly Journal of Medicine and Surgery.

February.

76 *Practical Management of Lesions of Bile Passages. H. H. Grant, Louisville.
77 Anesthesia and the Anesthetist. W. H. Long, Louisville.
78 Chronic Appendicitis: Postoperative Omental Thrombosis. L. Frank, Louisville.

March.

79 Hypertrophied Prostate Gland. J. G. Sherrill, Louisville.
80 Vital Force. J. Glahn, Owensboro, Ky.
81 Case of Cesarean Section. L. Frank, Louisville.

76. **Lesions of the Bile Passages.**—Grant gives the following indications for guidance in suspected lesions of the biliary passages: 1. When the symptoms are mild, consisting of a protracted dyspepsia, more or less severe, with occasional pains shooting up into the shoulder, a general loss of vitality, coupled with a persistent tenderness in the gall-bladder region, and after a reasonably patient medical treatment, the time for exploratory incision has arrived. 2. The presence of repeated attacks of pain, due to evident subacute inflammation in this region, the presence of a tumor more or less constant, of any appreciable size whatever; the existence of recurrent or possibly persistent jaundice, with or without clay-colored stools; attacks, one or more, of acute inflammation, with fever and pain; the history of the so-called biliary colic attacks; an assemblage of two or three of these symptoms, coupled with a persistent tenderness in the region of the gall bladder, probably reinforced by Moynihan's sign of tenderness posteriorly over the shoulder blade, constitute an absolute indication for exploratory surgery, with the prospect of almost certain relief.

Lancet-Clinic, Cincinnati.

February 29.

82 Plea for Better Obstetric Technic. A. B. Davenport, Columbus, Ohio.
83 *Case of Chronic Parenchymatous Nephritis in Which Decapsulation of Both Kidneys Was Practiced. J. C. Oliver, Cincinnati.
84 Clinical Methods in the Education of the Medical Student. J. A. Thompson, Cincinnati.
85 Case of Large Wound of the Scalp. R. Bellantoni, New York.

83. Abstracted in THE JOURNAL, Jan. 28, 1908, page 233.

Annals of Ophthalmology, St. Louis.

October.

86 Double Perforation of the Eyeball by Metallic Foreign Bodies. E. A. Shumway, Philadelphia.
87 Case of Subretinal Cysticercus. F. Lopez, City of Mexico.
88 Comparison Between Hysterical and Simulated Blindness. H. F. Hansell, Philadelphia.
89 Traumatic Irideremia. T. Faith, Chicago.
90 Veronal Conjunctivitis Showing Unusual Corneal Conditions. W. C. Posey, Philadelphia.
91 The Visible Remains of the Vitreous Canal, with Report of Case. B. Chance, Philadelphia.
92 The Motais Operation for Ptosis. Report of Three Cases. W. T. Shoemaker, Philadelphia.

Southern California Practitioner, Los Angeles.

January.

93 Surgery of the Thyroid Gland. W. W. Beckett, Los Angeles.
94 *Ideals of a County Medical Society. F. M. Pottenger, Monrovia, Cal.
95 Pathology of Plague. W. M. Horton, Los Angeles.
96 Symptomatology of Plague. L. M. Powers, Los Angeles.
97 *Prevention of Plague. R. M. Blue, San Francisco.

94. Abstracted in THE JOURNAL, March 14, 1908, page 907.

97. Similar articles by this author appeared in THE JOURNAL, Feb. 1, 1908, page 327, and in the *California State Journal of Medicine*, December, 1907.

Virginia Medical Semi-Monthly, Richmond.

February 21.

98 Malignant Disease of the Stomach; Diagnosis in Early Stages. M. J. Payne, Staunton.
99 Diseases of the Antrum. J. A. White, Richmond.
100 Enlargement of the Prostate. H. M. Trout, Roanoke.
101 The Stomach and Its Abuses. M. O. Burke, Richmond.
102 Physiology of the Spleen and the Indications for Its Removal. M. E. Nuckols, Richmond

103 Pneumonia. R. S. Martin, Stuart.
104 Electrotherapeutics in the Commoner Diseases. F. K. T. Warrick, Richmond.

American Journal of Urology, New York.

February.

105 Surgery of the Prostate. H. J. Scherck, St. Louis.
106 A Good Working Plan for the Treatment of Chronic Gonorrhea. E. Reissman, Newark, N. J.

Denver Medical Times.

February.

107 Featural Surgery. F. E. Waxham, Denver.
108 The Permanent Frown and Its Surgical Eradication. C. C. Miller, Chicago.
109 A Case for Venesection. A. T. Monismith, Fort Lupton, Colo.
110 Report of One Hundred and Fifty Cases of Pulmonary Tuberculosis. J. D. Gibson, Denver.
111 Rational Treatment of Pneumonia. J. Burke, Manitowoc, Wis.

March.

112 Acute Gonorrhea. W. H. Davis, Denver.
113 Symptoms and Diagnosis of Influenza. H. W. Rover, Denver.
114 Eye Complications of Influenza. G. F. Libby, Denver.
115 Throat, Nose and Eye Complications of Influenza. R. Levy, Denver.
116 Purulent Pericardial Effusion. H. B. Whitney, Denver.
117 Surgical Sequelæ of Influenza. L. Freeman, Denver.
118 Therapy of Influenza. M. Kleiner, Denver.
119 Laboratory Diagnosis for the Practitioner. J. C. Todd, Denver.

Utah Medical Journal, Denver.

February.

120 Surgery of the Thyroid Gland (concluded). A. C. Behle, Salt Lake City.
121 Treatment of Compound Fractures. R. S. Joyce, Ogden.
122 Atropin. R. J. Smith, Schenectady, N. Y.

March.

123 Knee-Joint Disease. H. M. Mayo, Salt Lake City.
124 Treatment of Sciatica. A. S. Bower, Salt Lake City.
125 *X*-Ray Treatment of Skin Diseases. E. D. Hammond, Salt Lake City.
126 Tuberculosis and Phthisis. F. Clift, Salt Lake City.

Buffalo Medical Journal.

March.

127 Present Status of Physiologic Therapy in Medical and Surgical Practice. S. H. Monell, New York.
128 Feeding in Tuberculosis. J. R. L. Daly, New York.
129 Lipoma Arborescens of the Knee Joint. R. O. Meisenbach, Buffalo.
130 Extracts from a Doctor's Ledger. B. H. Colegrove, New York.
131 Experiments on the Application of Suprarenin in Obstetrics. M. Neu, Heidelberg, Germany.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London.

February 22.

1 *Pyogenetic Activities of the Pneumococcus. J. W. H. Eyre.
2 *Functions of the Stomach and the Operation of Gastroenterostomy. H. M. W. Gray.
3 *Night Blindness. J. H. Parsons.
4 Aneurism of the Femoral Artery in a Man, Aged 78, in Which Suppuration Took Place from Pneumococcal Infection; Recovery. H. H. Clutton and L. S. Dudgeon.
5 Three Cases of Poisoning by Carbonic Oxid; One Recovery. R. S. Pearson.
6 Method of Roentgen Examination in Cases of Urinary Calculus. C. J. Morton.
7 *Dammed Circulation and Interrupted Circulation; a Note in Nomenclature. W. Ewart.

1. The Pneumococcus.—Eyre describes the growth of our knowledge of the pneumococcus, and catalogues the various names that have been given to it, eighteen in number, three of which have survived, viz., *Pneumococcus, Diplococcus pneumoniæ*, and *Streptococcus lanceolatus*. Among the lesions that have been occasioned by the pneumococcus are meningitis, ulcerative endocarditis, suppurative pericarditis, pleurisy, otitis media, arthritis, peritonitis, localized abscess, conjunctivitis, epiphysitis, osteomyelitis, periostitis and necrosis, thyreoditis, parotiditis, tonsillitis (follicular and membranous), gastritis, nephritis and perinephritis, endocervicitis, etc. He describes the characteristics and types of coccus, the degree of virulence and the toxic dose, and then discusses the important factor of cell resistance of the subject attacked, which he considers contains undoubtedly the solution of the problem given by the varying nature of the lesions produced by one organism. He then discusses the applications of Wright's work to the pneumococcus and the production of antipneumococcic serums. The latter, while useful, never reached the measure of usefulness attained by diphtheria antitoxin, but by the use of killed cultivations or "vaccines" a much greater measure of success is attained.

2. The Stomach and Gastroenterostomy.—Gray sums up his conclusions as follows: 1. The cardiac and pyloric portions of the stomach are distinct in development, structure and pathology. 2. During the early stage of gastric digestion the pyloric portion is normally empty and tonically contracted. When food has attained a proper chemical reaction in the cardiac enlargement it passes into the pyloric portion. 3. Bearing this in mind, care should be taken in performing gastroenterostomy to make the opening in the stomach wall within the pyloric portion, as near the pylorus as possible. If the stomach has not irremediably lost its muscular power, this will provide against an "uncontrolled escape of the acid gastric contents," asserted by some to occur in cases of gastroenterostomy. If pyloric spasm is present the opening will act as a safety valve and remove the spasm. If pyloric stenosis exists, the natural condition of things will be most nearly approached, and the "regulating action" (Pawlow) of the pylorus, so necessary to perfect digestion, be most nearly approximated.

3. Night Blindness.—Parsons explains night blindness as follows: In night birds the retina contains only rods, no cones. Visual purple is associated with the rods only, and is absent when they are absent. With low illumination in man there is more rapid depreciation of central than of peripheral vision, so that vision under these circumstances is principally carried out by the rods. Form sense, dependent on the cones, quickly diminishes in passing from the point of fixation toward the periphery; but at night, acute appreciation of variation of light and shade is more important than accurate delineation of objects. The cones, of course, do not escape destruction in the affected zonular area in retinitis pigmentosa, but their loss is discounted by their relative unimportance in that region. A group of cases deserving special notice is that associated with jaundice; bile salts are a solvent of the visual purple. A fact hard to correlate with the cases occurring with jaundice is that the night blindness common among badly nourished natives in India disappears when they are fed on liver, a mode of treatment advocated in the Ebers papyrus (B. C. 1500).

7. "Dammed Circulation."—Ewart, commenting on the suggestion of Allen (*Medical Record*, Jan. 4, 1908, abstracted in THE JOURNAL, Jan. 18, 1908, page 237) to adopt the original German expression, *Stauungs-Hyperämie*, in place of the various terms now in use to denote Bier's constriction method, objects that the German term is not original, but is itself an inadequate translation of the prior English term "dammed circulation." He suggests "Bier's dammed circulation."

British Medical Journal, London.

February 22.

8 *Abdominal Tumors Simulating Malignant Disease and Their Treatment. A. W. M. Robson.
9 Surgical Aspects of Subphrenic Abscess. H. L. Barnard.
10 *Incidence and Spread of Cancer. G. L. Cheatle.
11 Form of Oral Filter to Be Worn During Operations by All Persons Inside the Operating Room. C. E. Duncan.
12 Appendicitis at Sea, with Remarks on the Surgical Equipment of the Mercantile Marine. A. E. Johnson.
13 The Ocular Reaction for Tuberculosis. A. D. Roe.
14 Urotropin in Night Blindness. S. Mallannah.

8. Tumors Simulating Cancer.—Robson refers to five patients sent to him, suffering from supposed cancer of the rectum or sigmoid with obstructive symptoms necessitating a colotomy, in whom, after periods varying from one to three years, he had to close up the artificial anus because of the disappearance of the supposed growth. In a subsequent case, remembering his former experiences, Robson decided to wait, keeping the bowels open and administering belladonna and nux vomica; the patient recovered completely. These cases he regards as probably chronic infiltrating colitis associated with pouches of lodging fecal matter, or perhaps simply due to infection spreading through the intestinal wall. Other cases were pouched cecum with hard fecal concretions (removed), chronic tuberculous tumors, stone in the ureter, a case apparently cancer of the esophagus, in which gastrostomy was performed, the patient being alive seven years later and occasionally resorting to feeding through his gastric stoma, the diagnosis remaining still doubtful. Robson states that he

could report a large number of cases of gastric tumors, apparently malignant, that disappeared after gastroenterostomy. From these he cautions against a too hopeless prognosis after gastroenterostomy for tumor, and recommends an exploratory operation in nearly all cases of tumor of the stomach; for, even though the growth may be irremovable, the rest engendered by a gastroenterostomy will always afford relief; and in some cases, at first thought to be malignant, a cure may follow. The duodenum, the liver and gall bladder, inflammatory enlargement of the pancreas, often give rise to conditions simulating malignant disease; the kidneys and suprarenals, the abdominal lymphatic glands, the uterus, ovaries and tubes all afford similar examples. Exploratory operations *per se*, he asserts, are now so harmless in most cases with proper care and skill that even if no real good ensues, no serious harm should follow.

10. **Cancer.**—Cheatle has collected 56 cases in which cancer began in the skin of the hand, in 54 of them on the dorsal surface. The commonest point of incidence was on the skin covering the posterior surface of the second metacarpal bone and on its radial side. He connects with this Dr. Henry Head's experiments on himself. Head excised segments of his radial and two branches of the external cutaneous nerves, with the result that sensation was lost for tactile, pain and temperature impressions in the skin of the area which the nerves supplied. Eventually a trophic ulcer developed over a point on the radial side of the posterior surface of the second metacarpal bone; just on the point, indeed, which is the commonest site for the incidence of cancer on the hand. Cheatle also quotes from a forthcoming work by Mr. James Sherren on "Nerve Injuries and Their Treatment," to the effect that, on complete division of sensory nerves, blisters may occur spontaneously, even when sensibility to prick is beginning to return in the affected area; and that in incomplete division blisters may appear, not only over the area of sensory loss, but over that in which there is hyperalgesia but no loss of sensibility. The clinical connection between external irritation and cancer is a factor too marked to be regarded only as a popular fallacy. "Why," he asks, "should it be that cancer most often starts along a line two inches broad drawn obliquely inward and upward across the back of the hand?" And he replies: "Within that line the nerves supplying the skin become cutaneous, and, as I have pointed out before, the incidence of cancer appears to me closely associated with those points." Further, in two cases he has found inflammatory changes in the posterior spinal root ganglion on whose cutaneous distribution each cancer began while no inflammatory changes appeared within the ganglia into whose distribution the cancers spread. These and other facts that he adduces render pertinent the query whether cancer itself may be rendered possible only when there is a disturbance of nerve supply. He also publishes, with illustrations, certain cases in which the spread of the cancer appeared to be delimited by the area of distribution of certain nerves.

Medical Press and Circular, London.

February 12.

15 *Cancer of the Uterus. C. Lockyer.
16 Lumbar Puncture in Optic Neuritis. S. Stephenson.
17 Recent Investigations on Dysentery. R. Kruse.
18 Extrauterine Pregnancy. H. Briggs.
19 *Symptoms and Etiology of Mania. L. Bruce.
20 *Vomiting of Anesthesia. L. G. Gunn.

15. **Cancer of Uterus.**—Lockyer asserts that, when we remember that there are cases on record where women have remained well for twenty years after operation for cancer of the cervix, it is not going too far to say that in certain favorable conditions the disease can be cured. At least 80 per cent. of cases of uterine cancer that have come under his observation have been inoperable from the vaginal hysterectomy point of view when first seen. He urges the crusade for publicity. Cancer of the body of the uterus is far less virulent than cancer of the cervix, is rarer, and is generally found in elderly spinsters or in women who have borne but few children. In these cases vaginal hysterectomy is, in his opinion, the treatment. He does not favor vagino-perineal section. Cancer of the cervix is more prone to affect mothers of large families. His plan of dealing with erosions of the cervix is to mop away all discharges through a Fergusson's speculum with sodium bicarbonate solution, swab with iodized phenol, remove the excess, and insert a tampon soaked in 10 per cent. ichthyol in glycerin every week until the lesion is healed. If the disease shows signs of spreading he removes a piece for histologic examination before deciding on operation. He objects to vaginal hysterectomy in these cases, because it opens up an enormous risk of implanting cancer cells on surfaces severed during operation; it is impossible to remove the parametric tissues surrounding the cervix; and high lying cancerous glands are not discoverable. He is impressed with the superiority of Wertheim's method of abdominal panhysterectomy over all others in these cases; he describes the technic thereof in detail.

19. **Mania.**—Bruce considers mania due to bacterial poisons formed in the intestinal tract and absorbed into the blood, which, having an affinity for the nerve elements, produce brain intoxication. He has produced evidences of lesions in rabbits, showing the facts on which he bases his opinion. In mania the leucocyte count shows a marked abnormality. The mouth secretions teem with bacteria. The digestive and bactericidal powers of the gastric juices are poor. The feces often show the *Bacillus coli* absent, or at least greatly diminished, and their place taken by streptococci. The pulse is rapid, the blood pressure low, except at the period of excitement. Agglutinating properties with regard to streptococci are present.

20. **Anesthesia Vomiting.**—Gunn endorses, from his own personal experience, McArthur's plan (*Montreal Medical Journal*, June, 1907), which consists of giving two ounces of fresh cold water to drink after midnight on the morning of operation, repeating this every fourth hour until two hours before operation, when ten ounces are given and repeated just before anesthetization begins. He does not, however, entirely endorse McArthur's explanation that the vomiting is due to swallowing of anesthetic laden saliva, which a stomach full of water dilutes. His observations do not bear out McArthur's data. He offers no other explanation, but considers the method worth trial.

Clinical Journal, London.

February 19.

21 *Treatment of Injuries of the Uterus. J. Bland-Sutton.
22 *Pneumococcus Infections. W. Osler.
23 *Alcohol in Treatment of Pneumonia. G. A. Sutherland.
24 Fracture of the Acetabulum. R. W. Fell.

21. **Injuries of the Uterus.**—Bland-Sutton divides injuries of the uterus into gynecologic injuries, including perforation by sound, dilator, curette or the nozzle of a syringe, and the introduction of strong irritant solutions into the peritoneal cavity. 2. Obstetric injuries, from forceps or turning, as also spontaneous injuries. 3. Injuries to the pregnant uterus (a) from kicks, horn wounds, etc.; (b) in the course of abdominal operations. He discusses each of these classes in detail.

22. **Pneumococcus Infections.**—Osler refers to the great increase, in late years, of pneumococcic infections, both in frequency and gravity. This increase is especially pronounced in the United States. He thinks that we may be on the crest of a pneumococcic wave, similar to the waves of other infectious diseases, plague, for example. The condition demands organized study from a preventive medicine standpoint quite as much as cancer or tuberculosis. He refers to the great variety of conditions that may be due to pneumococcic infection much as does Eyre (see Abstract No. 1). As to the mode of transmission, whether lymphatic or hematogenous, etc., there is yet much work to be done. He comments on the widespread prevalence of pneumococci in apparently healthy persons and on the extraordinary variability of the germs in virulence. He quotes Wadsworth's recommendation of alcohol—as an alcoholic solution of sodium bicarbonate and sodium chlorid with the addition of glycerin—as a mouth disinfectant.

23. **Alcohol in Pneumonia.**—Sutherland discusses the use of alcohol on the assumptions that the commonest cause of cardiac failure in pneumonia is poisoning and paralysis of the medullary center, and that alcohol is, in the majority of cases, a stimulant of that center. He considers the indications for its use, the proper time to give it, the contraindications, the form and the dosage.

Dublin Journal of Medical Science.

February.

25 The Future Teaching of Practical Midwifery. W. Smyly.
26 Acetonuria. H. B. Leech.
27 Pulmonary Embolus Following Operative Interferences. C. G. Cumston.
28 Treatment of the Epileptic. E. T. Jameson.

Bulletin de l'Académie de Médecine, Paris.

February 4, LXXII, No. 5, pp. 129-160.

29 *Radium Treatment of Vascular Nevi. Fournier.
30 *Dangers for Public Health from Arsenical Insecticides in Agriculture. P. Cazeneuve.

February 11, No. 6, pp. 161-212.

31 *Emergency Medication by Reduction of Amounts of Fluid in Body. (Médication d'urgence par la réduction des liquides.) H. Huchard and C. Fiessinger.
32 *Influence of Chilling in Etiology of Tetanus. (Tétanos rhumatismal.) H. Vincent.

29. **Radium Treatment of Vascular Nevi.**—Fournier supplements his previous communication on this subject, summarized in THE JOURNAL, March 7, 1908, page 806, by stating that the radium is applied to a flat nevus daily for several consecutive hours, or the treatment is divided into hours or half-hours. The nevus loses its color—after the reaction—in from six weeks to two months, approximately. For the angiomatous nevus the exposures are short, but frequently repeated, with longer or shorter intervals of suspension at the first sign of a reaction. The entire course of treatment in this form may require several months.

30. **Dangers of Arsenical Insecticides.**—Cazeneuve calls attention to the danger to the public health from the widespread use by farmers and market gardeners of paris green and other insecticides with an arsenic base. Besides the danger of direct poisoning from fruits and vegetables thus treated, the rains may wash the arsenic into the wells or springs. He cites an instance of multiple poisoning from the use of wine for which he thinks the insecticide with which the vines had been treated was probably responsible; he also quotes instances of rabbits killed by grazing under a vine recently sprayed with an insecticide.

31. **Emergency Medication by Reduction of Fluids in the Body.**—Huchard compares the effect of reduction of the fluids in the body to that of venesection in acute edema of the lungs—both are liable to ward off impending death and tide the patient past the crisis. He refers especially to the acute dilatation of the cavities of the heart in the course of certain valvular and heart affections, especially mitral lesions complicated by aortic insufficiency, fatty degeneration of the heart and "beer heart." As a rule, in arterial cardiopathies the patients are told to drink freely and to take plenty of milk, to favor the elimination of toxic elements. When the dilatation of the heart increases and becomes permanent, and the veins become irremediably dammed up, ingested fluids do not pass out through the kidneys, but remain in the tissues, flooding the blood, raising the pressure in the veins and distending the heart more and more, thus augmenting the dyspnea, the edema and the asystolic symptoms, against which digitalis and other drugs are impotent. At this perilous moment the indications are to reduce the amount of fluids in the body by reducing the intake. An injection of morphin may be useful as an adjuvant; it reduces the congestion in the kidneys and thus indirectly promotes diuresis. Nothing should be allowed the first day but a pint of milk and a quart of water, mixed, to be taken in wineglassful doses every hour; the second and third day half milk and half water, and by the fourth day some solid food is allowed. At the same time the patient should take digitalin, 0.0001 gm. (1/640 grain)—the crystallized form—daily for ten days, then intermit five days and resume for five or ten days. This obviates all danger of cumulative action. Theobromin, "the dechloridating agent," should be taken at the same time, about 15 grains a day, in divided doses. The amount of urine generally increases to about three quarts a day and then gradually subsides to about three pints, in proportion to the amount of edema to be absorbed. It may be necessary to tap an effusion or hard edema in the legs, but once these obstacles are removed, diuresis occurs. If it does not appear even under 4 grains (0.26) of caffein a day, then the prognosis is grave.

32. **Chilling in the Etiology of Infectious Diseases, Especially Tetanus.**—Vincent relates experimental research which demonstrates anew that peripheral local chilling is an extremely powerful adjuvant to infection with tetanus. The peripheral local chilling arrests for the time the vital processes in the member chilled. The local defensive activity of the leucocytes is annulled, and the germs of infection then are able to make inroads. A combination of various secondary causes may open the portals to infection when neither alone would accomplish it.

Presse Médicale, Paris.

February 12, XVI, No. 13, pp. 97-104.

33 *Diagnostic and Therapeutic Importance of Esophagoscopy. M. Guisez.
34 Disinfection of Uterus in Puerperal Infection. A. Schwab.

February 15, No. 14, pp. 105-112.

35 Lower Segment of Uterus. C. Jeannin.
36 Can Roentgen Rays Generate Cancer? G. Haret.
37 Palpation of Normal Stomach. G. Fischer.

33. **Advantages of Esophagoscopy.**—Guisez gives an illustrated description of his experience with 300 applications of the esophagoscope. He says that with a little cocain the introduction of the tube is not painful nine times out of ten. Many affections formerly deemed incurable, such as spasm, idiopathic dilatation, and cicatricial and congenital strictures, can be effectually cured or their effects remedied by the aid of esophagoscopy.

Revue de Gynécologie, Paris.

December, 1907, XI, No. 6, pp. 963-1152.

38 Female Epispadias and Its Surgical Treatment. G. Nové-Josserand and G. Cotte.
39 Symtomatology and Nature of Genito-ano-rectal Sclerema; 13 Cases. (Esthiomène de la vulve.) R. Dupuy and G. Rullier.
40 *Lessons from Five Hundred Gynecologic Operations. F. Jayle.

40. **Lessons Learned from 500 Major Gynecologic Operations.**—Jayle reviews a continuous series of 500 operations for inflammatory processes or neoplasms in the uterus or adnexa, summarizing in conclusion the causes of death. His experience indicates that the vaginal route is as dangerous as the abdominal one from the point of view of infection from without. Two patients succumbed to infection from the use of insufficiently sterilized compresses. They had been placed in the autoclave but not heated sufficiently, the "control tubes" usually placed in the compresses having been forgotten. Fatal endogenous infection was observed only with fetid or gaseous pus and in cancer of the cervix. Postoperative hemorrhage was always traced to slipping of the ligature on the infundibulo-pelvic ligament. Acute dilatation of the stomach followed several operations; the patients had always suffered previously from gastric disturbances, with much gas, and none had vomited after the operation. To prevent this complication Jayle examines the stomach and keeps the patients on a strict diet, administering ferments, such as lactic and paralactic bacilli, and after the operation he supervises the stomach very carefully, especially if the patient does not vomit. The delay of even a few hours before resorting to lavage of the stomach may prove too late to save the patient. The fluid found in the acutely dilated stomach was sometimes almost exclusively bile. Fatal embolism occurred in three cases. Jayle believes that refraining from injury of large vessels and absence of infection will render embolism less frequent. Total hysterectomy is less liable than the partial to be followed by embolism owing to the better drainage. He warns further to refrain from the Trendelenburg position in case of fat women, or at least, to use it as briefly as possible. The heart is generally soft and flabby in these women, and with the head low they become cyanosed, and are liable to succumb a few days later to heart failure. Since he has refrained from raising the pelvis in such cases he has ceased to have cardiopulmonary disturbances of this nature. His experience emphasizes the necessity for tapping ascites two or three days before the laparotomy in case the effusion is estimated at three quarts or more. Reflex heart trouble is liable to appear when this rule is disregarded. When the kidney is not functioning well, in much debilitated patients, he prefers ether to chloroform to avoid the toxic action of the latter on the kidney.

Berliner klinische Wochenschrift.

January 27, XLV, No. 4, pp. 133-180.

41 *Conjugal Diabetes. (Zuckerkrankheit bei Eheleuten.) H. Senator.
42 Anatomy in Respect to Affections of the Pancreas. A. W. Mayo Robson.
43 Septic Arteritis and Aneurism in a Child. A. Baginsky.
44 *Extraperitoneal Cesarean Section. (Extraperitonealer Kaiserschnitt.) F. Fromme.
45 *Differential Diagnostic Value of Wassermann's Serodiagnosis of Syphilis for Internal Medicine and Neurology. K. Kroner. Id. W. Fischer.
46 Ocular Reaction to Tuberculin. (Ophthalmoreaktion.) A. Rosenberg.
47 Suppurative Affections of the Prostate. (Eitrige Erkrankungen der Prostata.) J. Vogel.

February 3, No. 5, pp. 181-222. James Israel Number.

48 *Surgical Syphilis. F. Karewski.
49 *Paralysis from Traumatic Hysteria. (Hysterotraumatische Lähmungen.) J. Grunewald.
50 *Aggravation of Tabes and Progressive Paralysis by Accidents. (Verschlimmerung der Tabes und Progressiven Paralyse durch Unfälle.) L. Feilchenfeld.
51 *Four Cases from the Borderland of Surgery and Hysteria. (Beiträge Zu den Grenzgebieten der Chirurgie und Hysterie.) Adler.
52 *Twenty Years in Israel's Clinic. A. Rosenbaum. Id. Anesthetics. L. Caro.
53 *Radical Operations for Hernia in Children. (Brüche bei Kindern.) H. Maass.
54 Diagnosis and Treatment of Rectal Fistulas. (Mastdarmfisteln.) G. Ruben.
55 Successful Removal of Tumor in the Trachea and of Tumor in the Carotid Gland. (Trachealtumor und Tumor der Glandula Carotica.) M. Zondek.
56 *Surgical Treatment of Chronic Dysentery. (Colitis ulcerosa chronica.) Steiner.
57 Influence of Nephrectomy on the Osmotic Pressure of the Amniotic Fluid and Blood Serum. (Einfluss der Nierenexstirpation auf den osmotischen Druck des Fruchtwassers und des Blutserums trächtiger Tiere.) B. Wolff.
58 Origin and Treatment of Injuries of Meniscus in the Knee Joint. M. Katzenstein.
59 Surgery of Tuberculous and Stone-Containing Kidneys. (Chirurgie der tuberkulosen und Steinniere.) P. Wulff.
60 *Treatment of Tuberculosis of Bladder with a 6 Per Cent. Solution of Carbolic Acid. (Behandlung der Blasentuberkulose nach Rovsing.) P. Rosenstein.
61 Inflammation in the Shoulder Region. (Periarthritis scapulohumeralis.) A. Schlesinger.
62 Inflammatory Changes in Kidney Resembling Hypernephroma. (Hypernephromähnliche entzündliche Veränderung der Niere.) H. Neuhäuser.
63 Ten Cases of Actinomycosis. R. Baum.
64 Angioma of the Parotid. E. Lewitt.
65 Ocular and Cutaneous Reactions to Tuberculin. (Neuere Untersuchungsmethoden zur Erkennung der Tuberkulose.) S. Levi.
66 *Leukemia and Infectious Diseases, with Special Regard to Acute Infections. J. W. Samson.
67 Opsonins and Their Diagnostic Importance. M. Arinkin and C. Schneider.
68 Bladder Stones in Art. (Der Blasenstein in medico-kunsthistorischer Beziehung.) E. Holländer.
69 The Dynamic-Mechanical Principle in Appendicitis. (Zur Perityphlitisfrage.) Id.

41. Conjugal Diabetes.—Senator discusses the contagiousness of diabetes, and cites a number of examples which seem to suggest possible transmission. Among them is a case of diabetes in a woman whose husband's brother and his wife both had the disease; also a case of diabetes developing in a man after marrying into a diabetic family, both parents of his wife having diabetes. In another case, a physician, 42 years old, developed diabetes not long after he had amputated, in another town, the leg of a patient on account of diabetic gangrene. There were also in the same street with the diabetic physician four other men with diabetes, one of whom had a diabetic wife. Six cases of diabetes in a town of only 2,500 people, and all among close friends and neighbors, one of whom kept a saloon frequented by the others, is certainly a remarkable coincidence. In Senator's own experience he found the husband or wife also affected in 22 cases among 516 married patients with this disease. From this list he subtracts 3 cases in which the diabetes developed in both simultaneously after some great emotion, such as the burning or death of a child. In the 19 cases of conjugal diabetes an interval ranging from 1 to over 15 years elapsed between the development of the diabetes in the second party, the couples having all been married for from 23 to 42 years. In 4 cases there were evidences of a diabetic inheritance. The total proportion of 3.7 per cent. is too small, he declares, to justify the assumption to date that diabetes can be transmitted from one person to another, not a blood relation. Further research and compilations are needed to decide the question. His experimental researches all gave negative results.

44. Extraperitoneal Cesarean Section.—Fromme has had opportunity to perform the operation recently advocated by Frank, described in THE JOURNAL, June 22, 1907, page 2132. In one case labor had been in progress six hours, the still pulsating cord was protruding from the vulva. The true conjugate diameter measured only 6.25 cm., and infection was probable. The face presentation was changed by version, and the living child delivered, after which the uterus was sutured with silk and the peritoneum with catgut. The wounds healed by primary intention. Equally favorable results were obtained in three other cases. Fromme prefers a longitudinal to the transverse incision recommended by Frank.

45. Serum Diagnosis of Syphilis.—Kroner found the diagnosis invariably positive in the cases of certain syphilis, either existing or in the anamnesis, but he does not regard negative findings as conclusive in regard to the absence of syphilis. Fischer found the reaction positive in 84 per cent. of the cases of suspected syphilis. In one case of beginning tabo-paralysis forty years had elapsed since the primary infection, but the reaction was positive.

48. Surgical Syphilis.—Karewski urges local antiseptic measures and the scraping out of the focus in all syphilitic ulcerative processes, and insists on the importance, further, of surgical interference in all processes in bones and joints. He warns against relying too implicitly on constitutional treatment. A suppurative process in a bone promotes casual septic infection; two patients succumbed to pyemia during syphilitic necrosis of the upper jaw. In another case the patient, with one foot in the grave, was saved by removal of the entire bony framework of the face. Cleansing out the focus and general treatment are usually all that is necessary. In some cases prompt improvement follows sweating procedures in cases refractory to iodid or mercury. Arsenic may also prove useful. The benefit reported from arsenic in certain cases of sarcoma, he suggests, may be due to the fact that the sarcoma had developed on a gumma. Serum diagnosis and Roentgen examination are valuable aids in surgical syphilis.

49. Ten Cases of Traumatic Hysteria and Paralysis.—Transient benefit was obtained with hypnosis in three cases, but it gradually lost its power. Three patients were cured or immensely improved by electric treatment, superheated air and suggestion, while no improvement was observed in another case. The accident insurance legislation in Germany is an important factor in traumatic hysteria.

50. Aggravation of Tabes and Paralysis by Trauma.—Feilchenfeld reports 17 cases of tabes and 8 of progressive paralysis in which a trauma evidently cooperated in the development of the affection or aroused it when latent.

51. Borderland Between Surgery and Hysteria.—Adler reports a case of hysterical fever developing after an operation on an ankylosed hip joint. In another case the hysterical fever developed after tonsillectomy. The patient complained of pain and other symptoms suggesting mastoiditis, but operation revealed normal conditions. The nurses were warned of the probable hysterical nature of the "fever," but it persisted high until the physician, himself, took the temperature in the axilla and rectum, and it was found normal, as occurred also in another instance. In all these cases the "fever" developed after an operation, and the wound was reopened to discover the source of the temperature. In another case, a man of 22 presented a hysterical pseudoappendicitis which was recognized in time to prevent a useless operation; the patient has been in the best of health during the three years since the sham operation. In conclusion the literature on the subject of surgery in these dubious hysterical cases is reviewed.

52. Statistics of Israel's Clinic.—This number of the *Wochenschrift* is dedicated to Israel, on the occasion of his sixtieth birthday, and contains twenty-five papers by his present and former pupils on various phases of surgery and internal medicine, with reports of the work in Israel's private clinic during the last twenty years. Israel has been a pioneer in surgery of the kidneys, based on his long training in internal medicine under Traube. In respect to the anesthetics used at the clinic, Caro states that chloroform, or ether combined with

morphin, is the preferred technic. Spinal anesthesia is given the preference, however, for all operations below the costal arch. The scopolamin-morphin technic is never used unless the heart is known to be sound, and even then great caution is regarded as indispensable with this technic. It was applied in 134 cases, with subsequent atony of the intestines in 27 cases. Spinal anesthesia was applied in 54 cases, with vomiting in 60 per cent. and headache in 90 per cent. Chloroform was given in 851 cases, with vomiting in 60 per cent. and pneumonia in 13 instances. Chloroform plus ether was given in 128 cases, with vomiting in 90 per cent., as occurred also in 45 cases of chloroform plus oxygen. Ether plus morphin was given in 201 cases, with vomiting in 20 per cent., and pneumonia in 10 cases.

53. **Hernia in Children.**—Maass calls attention to the inadvisability of trying to close up the hernial opening in children, as their continued growth soon obliterates it in the most satisfactory manner. The main point is to isolate the neck of the sac and ligate it so high that the stump will retract entirely into the abdominal cavity.

56. **Surgical Treatment of Chronic Ulcerative Colitis.**—Steiner reports two cases in which he succeeded in curing apparently inveterate dysentery by making a temporary artificial anus into the cecum to allow local treatment and to rest the inflamed colon.

60. **Treatment of Tuberculosis of the Bladder According to Rovsing.**—Rosenstein reports two cases of tuberculosis of the bladder in which he applied Rovsing's technic of local application of a 6 per cent. solution of carbolic acid. The results, he thinks, confirm the opinion that this method represents important progress, especially in the cases in which the bladder affection persists after removal of the kidney. He warns that it is a heroic measure and may lead to slight collapse, but with cautious dosage and close supervision the patients can be relatively or completely cured.

66. **Effect on Leukemia of Intercurrent Infection.**—Samson discusses the effect of an intercurrent acute infection on leukemia and reports a case in which the signs and symptoms of lymphoid leukemia in a child vanished at the onset of noma. They returned later, however, after the recovery from the acute infection, and the child died.

Correspondenz-Blatt für schweizer Aerzte, Basle.

January 15, XXXVIII, No. 2, pp. 33-72.

70 Treatment of Suppurative Otitis Media by the General Practitioner. (Mittelohreiterung.) F. Siebenmann.
71 Differentiation and Questionable Value of Serum Treatment of Epidemic Cerebrospinal Meningitis. C. Müller. Commenced in No. 1.
72 Ocular Reaction to Tuberculin. (Ophthalmo-Reaction.) O. Stoll.

February 15, No. 4, pp. 105-136.

73 *Idiopathic Dilatation of Esophagus. (Speiseröhrenerweiterung.) A. Huber.
74 *New Edition of Swiss Pharmacopeia. (Pharmakopœa Helvetica.) M. Cloetta.

73. **Idiopathic Dilatation of Esophagus.**—Huber gives skiagraphs of a patient with extreme dilatation of the esophagus, and reports also a second case. Roentgen examination showed the lack of conditions indicating operative treatment. Much benefit was derived from feeding through the stomach tube—one patient gained several pounds in less than three weeks. There was nothing to indicate spasm of the cardia; the trouble seemed to be merely primary paralysis of the walls of the esophagus.

74. **New Edition of Swiss Pharmacopeia.**—Cloetta remarks in concluding his review of the new (fourth) edition of the Pharmacopeia Helvetica, that it is to be hoped that physicians will be able to find what they want for each patient among the 853 medicines listed in this book, and that they will henceforth refrain from prescribing "patent medicines." The pharmacopeia commission did not wish to promote the sale of patent-protected medicines, and consequently the fancy, trade name of a drug is given only when the patent has expired. Otherwise only the chemical name of the drug is given in the text, but in the index the protected name is given, with reference to its chemical name. One section of the work is devoted to sterilization; it is not intended to compete with aseptic methods, but merely to enlighten the druggist in case the physician's directions are not explicit enough. The only serums listed are those for diphtheria and tetanus and Koch's tuberculin. The others are excluded for the same reason that ichthyol and strophanthin are excluded, namely, because chemists and pharmacists are not satisfied that these drugs have sufficiently reliable identity reactions. The maximal dose of cocain has been reduced from 0.05 to 0.03 gm. (0.5 grains); of digitalis, from 2 to 1 gm. (30 to 15 grains) a day, and of scopolamin, raised from 0.0002 to 0.0005 gm. (1/120 grain). The initials P. I. stand for the unified methods of preparing drugs agreed to in the international pharmacopeia. About 151 new articles are included in this last edition and 95 were dropped. It makes great demands on the apothecaries, and Cloetta thinks that this is the best means to enhance the dignity of this profession. The demands for testing the purity, etc., of the various drugs are so high that only scientifically trained men can comply with them. Physicians should bear this in mind when it is a question of self-dispensing, and apothecaries, in their turn, should remember their principles when clients ask them for medical advice.

Deutsche medizinische Wochenschrift, Berlin.

February 13, XXXIV, No. 7, pp. 265-312.

75 *What Has Been Learned Lately in Regard to the Stomach. (Neuere Ergebnisse der Therapie, etc., des Magens.) J. Strasburger.
76 *Conjunctival and Cutaneous Application of Tuberculin. E. Stadelmann. Commenced in No. 5. Id. O. Gaupp.
77 Biologic Research with Solution of Iron Albuminate. (Liquor ferri albuminati.) W. Schultz.
78 Suture of the Heart After Bullet Wound. (Herznaht.) G. Sultan.
79 Research on O. Schmidt's Alleged Protozoon-like Parasite of Malignant Tumors and "Cancroidin" (Schmidt.) B. Baisch.
80 Blindness in Eyes that Squint. (Amblyopia strabotischer Augen.) F. Becker.
81 Powder Insufflator for the Trachea. (Kehlkopfpulverbläser.) J. Eiselt.
82 New Remedies, Specialties and Proprietaries. F. Zernik.
83 Progress in Appliances for Care of the Sick. (Krankenpflegetechnik.) P. L. Jacobsohn.
84 Text of Proposed Bill to Regulate Practice of Medicine by Irregulars and the Sale of Proprietaries.
85 Importance of Chair of Orthopedics. Mamlock.

75. **Physiology and Treatment of the Stomach.**—Strasburger reviews what has been learned in late years in regard to the physiology, pathology and treatment of the stomach. Grützner's research has confirmed the fact that the food as it is taken into the stomach lies in layers and does not become mixed. The food first taken into the stomach lies around the periphery and that taken later lies inside of this and thus does not come in contact with the mucous membrane, even when the food is more or less fluid. These facts show that the Sahli and Mathieu tests of stomach functioning are liable to give misleading findings. They also throw new light on the therapeutic administration of hydrochloric acid. When the hydrochloric acid is given after a meal it lies in the middle of the top layer of the stomach content and thus does not come in contact with the pepsin secreted by the mucosa. The digestion is not improved by its administration unless pepsin is administered with it. Experience has shown, also, that larger amounts can be given to advantage. Leo prescribes for adults from one-half to two teaspoonfuls of a mixture of 5 or 10 parts each of hydrochloric acid and dried pepsin with water to 50 parts, taken in sweetened tea during or after the meal. If the aim is to prepare the stomach mucosa for secretion of gastric juice on ingestion of food, or to stimulate the production of bile and pancreatic juice, the hydrochloric acid should be given alone, just before the meal, without pepsin, and in smaller doses.

76. **Ocular and Cutaneous Reaction to Tuberculin.**—Stadelmann's extensive clinical research with these reactions has failed to explain the occasional tardy reaction to the cutaneous inoculation of tuberculin, but it shows that this form of reaction has no diagnostic importance so far as can be learned. He found that the cutaneous or ocular reaction is liable to flare up again if tuberculin be injected for the ordinary exploratory test, or in treatment, even weeks after the primary ocular and cutaneous tests. In all probability, he says, the positive response to the ocular test indicates the existence of an active tuberculous process in the organism, and

a positive reaction to the cutaneous test the existence also of an inactive focus. He advises combining both tests.

Medizinische Klinik, Berlin.

February 16, IV, No. 7, pp. 217-250.

86 Marriage of Nervous and Psychopathic Individuals. E. Redlich.
87 Fibromas in the Stomach. (Bindesubstansgeschwülste des Magens.) E. Bircher.
88 *Potassium Iodid to Arrest Incipient Cataract. von Pflugk.
89 Amyotrophic Lateral Sclerosis. Scheel.
90 Treatment of Whooping Cough with Inhalation of Fumes of Bromin. (Keuchhustenbehandlung.) W. R. Schottin.
91 Thermometer Case with Disinfectant. (Neuheiten aus der Technik.)
92 Deafness from Affection of Labyrinth. (Labyrinthschwerhörigkeit.) H. L. Lachmund.

88. Potassium Iodid in Treatment of Incipient Cataract.—von Pflugk reports excellent results from subconjunctival injection of a 1 per cent. solution of potassium iodid, containing 2 per cent. sodium chlorid, in the earlier stages of cataract. Experimental research has also confirmed the benefits of this treatment and explained its mechanism. Since Badal's first recommendation of potassium iodid for this purpose, in 1901, 239 cases have been published, including von Pflugk's own experience with 55, and Verderau's with 48. Improvement was marked in all but 14 and 6 patients, respectively, and the cataract did not progress in any instance. Badal and his followers merely instill and bathe the eye with .025 and 2.5 per cent. solutions and the results are not so good as with the subconjunctival injection. It is well to commence with their technic, however, and resort to the injections if improvement does not become evident under the instillations. The potassium iodid technic is regarded by von Pflugk as one of the most important achievements of the last few years, and he urges its general adoption and perfection of the technic. Capsular and nuclear cataract are not benefited to any extent, the potassium iodid having its main effect on ordinary subcapsular cortical cataract.

Münchener medizinische Wochenschrift.

February 11, LV, No. 6, pp. 265-329.

93 *Keating-Hart's Method of Sideration or Fulguration of Cancer with Powerful Electric Spark. (Blitzbehandlung der Krebse.) Czerny.
94 Immunization by the Mouth. K. Wolff.
95 *Polycythemia. F. Lommel.
96 Experimental Research to Explain Action of Constriction Hyperemia. (Wirkungsweise der Bierschen Stauung.) E. von Graff.
97 *Study of the Serum in Thyroid Disturbances. R. Hoffmann.
98 Lysol and Cresol Soap. M. Schottelius.
99 Electricity and Magnetism of Human Skin. (Hautelektrizität und Hautmagnetismus der Menschen.) E. Harnack. Commenced in No. 5.

93. Electricity in Treatment of Cancer.—Keating-Hart of Marseilles described at the Electric Congress at Milan in 1906 a method of destroying cancer by application of a powerful electric spark. His method, called sideration, fulguration or lightning treatment, has been extensively applied at Paris by Pozzi, and Czerny has given it a thorough trial in 35 cases. Although the interval since treatment is too brief for a definite conclusion, he is convinced that the method represents an important advance in treatment of cancer; it can be readily applied with any Roentgen equipment. It is especially adapted for superficial, ulcerating cancers on the skin or mucous membranes, as it destroys the diseased tissues with an elective action while respecting sound tissue, and is thus more conservative than is possible with the knife. Many patients submit more readily to this treatment than to an operation, and can thus be earlier delivered from their cancer. Whether the cure from this technic is more permanent and recurrences rarer than after a knife operation can not be decided until after five years. Treatment of recurrences will be easier by this technic than with the knife, if it is applied at the first signs of recurrence. It has the advantage of greater certainty and more rapid action in comparison with radium and Roentgen treatment. Whether the fulguration acts on deeplying cancers is still a question. Czerny has modified Hart's technic to induce also what he calls fulguropuncture and fulgurolysis with bipolar application of the high-tension and high-frequency current. Hart's technic is to apply as powerful an electric spark as possible from a metal electrode at a distance of 2, 3 or 4 cm., focusing the spark at different points in the cancer, the entire exposure lasting from 5 or 10 to 40 minutes, with the patient under the influence of an anesthetic. The radiated, softened cancer substance is then scraped out and the "lightning" is then applied again for 10 or 15 minutes to the raw surface to destroy any possible cancer nests that may have been left. The apparatus used by Hart can be attached to the Roentgen apparatus, using a 50 cm. inductor and Wehnelt interrupter. The electricity is conducted to a petroleum condenser with a spark interrupter and solenoid. This is connected with an Oudin resonator, as shown in the illustrations, which can be arranged to send out a spark brush from 10 to 20 cm. (7 inches) long. It is said that the total amount of electricity is not very large, so the actual electrochemical action is comparatively slight. It seems to stimulate the connective tissue to granulation and normal growth. The powerful outward current of lymph that follows fulguration washes out the cancer cells and brings an army of phagocytes to the spot, but if any cancer cells remain unaffected by the fulguration they are liable to continue to proliferate.

95. Polycythemia with Enlarged Spleen.—Lommel reports three cases, and states that repeated venesection gave great subjective relief in one of his cases.

97. Study of the Serum in Thyroid Affections.—Hoffmann ascribes great importance to the behavior of the other glands with an internal secretion in the symptom-complex induced by excessive or deficient functioning of the thyroid gland. He believes that the thyroid and the suprarenals are antagonists and that the former has much to do with the functioning of the vagus, and the suprarenals with the functioning of the splanchnic nerve. The hypophysis can act vicariously for the thyroid to a certain extent, while the functioning of the ovary rises and falls with that of the thyroid. Extract of testicles acts like suprarenal extract in increasing muscular energy. When a gland with an internal secretion is doing extra work, its antagonist also has to increase its functioning to keep up with it or the balance is upset, and the excessive functioning of the one gland becomes accompanied by deficient functioning in its antagonist. In exophthalmic goiter, for example, the excessive functioning of the thyroid is accompanied by deficient functioning of the suprarenals. In myxedema, on the contrary, there is relative hyperfunction on the part of the suprarenals. He presents a number of arguments to sustain these assertions, and urges that in case of an affection traceable to one of the glands with an internal secretion, the others should be examined systematically at autopsy. He found that the pupil of the frog dilated under the influence of an extract of certain glands and contracted under the influence of others. He urges further experimental research with extirpation of certain glands, followed by feeding or injecting the animals with extracts of the antagonist glands. The practical results of his research are that affections of the various glands should be treated with organotherapy from the antagonist glands. He states that a patient with osteomalacia showed marked improvement, subsidence of the pains and increased weight, under treatment with the serum of thyroidectomized sheep, which also benefited notably patients with mongolism and abortive forms of myxedema. Ovarian and testicular extract would probably, he thinks, prove still more effectual in these latter cases. The serum of thyroidectomized sheep is also indicated in hay fever and bronchial asthma, in hemorrhage and diabetes. On the other hand, the pupil-contracting substance in the serum of patients with abortive myxedema and mongolism might be used to advantage in treatment of glaucoma.

Therapeutische Monatshefte, Berlin.

January, XXII, No. 1, pp. 1-56.

100 Treatment of Epilepsy. E. Meyer.
101 Chemical Individuality. W. Heubner.
102 *Nocturnal Enuresis in Children. Fürstenheim.
103 *Treatment of Puerperal Pyemia. Liepmann.
104 *Tuberculosis of the Eye. (Augentuberkulose.) E. Lichtenstein.
105 Cholesteatoma of External Ear. (Epidermispfröpfe des äusseren Gehörganges.) Klau.
106 Treatment of Psoriasis. E. Saalfeld.
107 *Cutaneous Reaction in Diagnosis of Tuberculosis. H. Naegeli-Akerblom and Vernier.
108 Potatoes with Starch Removed. (Speisen aus entmehlten Kartoffeln.) Wolfner.

102. Nocturnal Enuresis in Children.—Fürstenheim dwells on the necessity for "rhythmifying" the urinary functions. Children should be trained to urinate at regular two or three hour intervals, and should be waked for the purpose at night, if necessary, to stop enuresis. He ascribes to abnormally profound sleep the lack of control over the urinary functioning, and urges that children should take a nap during the day to render the sleep at night less profound. Change of scene is the most effectual of all measures against enuresis, supplemented by psychic treatment, especially praise and insistence when the child has once succeeded in passing a night without wetting himself. Rewards and punishments soon lose their effect, and have a bad influence. Actual hypnosis, he thinks, has an effect beyond what is generally recognized. After its application the children sleep restlessly, grow listless and lose color and appetite. Waking suggestion is generally sufficient. Fall or spring weather is liable to bring back the enuresis, but the wearing of an abdominal band at night generally arrests the tendency. Urinals and similar appliances do not answer the purpose so well as absorbent cotton folded in a diaper or something of the kind.

103. Treatment of Puerperal Pyemia.—Liepmann advocates surgical intervention, removing the cause at one stroke, merely waiting for subsidence of the acute manifestations. The discovery, through the vagina, of something resembling a varicocele, in a vein, is the signal for operating. The indications are best met by ligating the diseased ovarian and hypogastric veins, not forgetting the possibility of the existence of a second internal or median iliac vein, such as Kownatzki has recently discovered. Proper opening up of the field and ligation of the venous trunks actually involved in the process is the aim in operating. The diseased vein should not be resected, as this is liable to distribute the germs. To date, 7 patients have been cured out of 20 operated on, and faulty technic was evidently responsible for several of the failures.

104. Tuberculosis of the Eye.—Lichtenstein states that this affection is observed in about 0.5 per cent. of all the applicants at the Berlin eye clinic, and he describes the various forms observed. A primary process generally remains restricted to the eye, and may heal in time without much impairment of vision—the only exception is granulating tuberculosis. This usually entails the loss of the eye, if not general infection also.

107. Cutaneous Reaction to Tuberculin.—This article states that the mere rubbing on the skin of a dead culture of tubercle bacilli or a little tuberculin—after the skin has been shaved—will induce the typical specific reaction after twenty-four hours, without the necessity for scarifications. The reaction results from the action of the tuberculin on the soluble products of the tubercle bacilli in the skin. The reaction is not dependent on the presence of living bacilli in the tissues.

Wiener klinische Wochenschrift.

February 13, XXI, No. 7, pp. 213-246.

109 *Pathogenesis of Cholelithiasis. A. Exner and H. Heyrovsky.
110 *New Formed Element in Milk. (Neuer Formbestandteil in der Milch: Laktokonien.) A. Kreidl and A. Neumann.
111 *Simplified Serum Diagnosis of Syphilis. E. Klausner.
112 Adrenalin Anemia. (Adrenalinämie.) M. Goldzieher and B. Molnar.
113 *Two Cases of Paratyphoid Meningitis in Infants. L. Arzt and J. Boese.
114 Two Cases of Aseptic Nephrolithiasis. G. Nicolich.

109. Pathogenesis of Gallstones.—Exner and Heyrovsky relate research which demonstrates that the bile acid salts are precipitated under the influence of bacteria added to the bile. This occurs with various bacteria, but is nearly ten times more marked with typhoid bacilli than with others, as is shown by the tabulated findings of tests with seven varieties. The typhoid bacillus must play a prominent part in the pathogenesis of cholelithiasis; when other germs are found in the gallstones, they are probably a secondary invasion. See editorial in THE JOURNAL, March 14.

110. New Formed Elements in Milk.—Kreidl and Neumann state that study of the milk of various species with the ultramicroscope has shown the presence of innumerable small particles, in lively molecular motion, in the plasma of every specimen of milk, except human milk, in which none could be discovered. They call these little bodies "lactoconias," like the hemoconias in the blood. They are now studying the nature of this "milk dust."

111. Simplified Serum Differentiation of Syphilis.—Klausner announces that he has obtained constantly positive results in 31 cases of syphilis and constantly negative results in 23 cases of non-syphilitic cutaneous affections with the simple diagnostic test he proposes. In a glass, 0.5 cm. in diameter and 7 cm. tall, he mixes 0.2 c.c. of the patient's serum with 0.7 c.c. of distilled water. After thorough mixing, the glass is set aside at room temperature. In the course of about fifteen hours a precipitate forms, in the syphilitic cases from 2 to 4 mm. in depth, or flakes float in the fluid, gradually sinking to the bottom. The control glasses show no precipitation during this period; if a little precipitation occurs by the end of twenty-four hours it is insignificant compared with the marked amount in the syphilitic serum. As the precipitate dissolves in physiologic salt solution and in acetic acid, he believes it to be formed of globulin, and that it may possibly prove to be characteristic of all processes accompanied by formation of antibodies. The reaction was positive also in 2 cases of severe croupous pneumonia and in 1 of typhoid, but by diluting the serum to 1 to 5 or 1 to 10, there was no further reaction in these cases, while the reaction occurred unmodified even with this dilution in the cases of syphilis.

113. Paratyphoid Meningitis in Infants.—Arzt and Boese relate experiences and research which establish, they think, that paratyphoid infection is by no means uncommon among infants. It probably originates in the intestinal tract and may lead to bacteriemia. A fibrous-suppurative meningitis may follow, and this form of meningitis may prove to be more frequent than hitherto supposed. The article concludes with a bibliography of 144 articles bearing on paratyphoid infection and meningitis.

Zentralblatt für Chirurgie, Leipzig.

February 15, XXXV, No. 7, pp. 185-216.

115 *McBurney's Point. Lanz.
116 Urine Findings After Spinal Anesthesia. (Urinbefunde nach Lumbalanästhesie mit Stovain—Billon.) B. Csermak.

115. Location of Appendix.—Lanz noted a fold in the skin over the iliac fossa in a bronze sleeping faun at the Naples museum and also in another classic statue, and has found that an incision corresponding to this constant fold in the skin allows the best access to the appendix while giving the best cosmetic results. In by far the larger majority of cases the mouth of the appendix is at a point one-third of the distance on a straight line from spine to spine. He gives an illustration of his "girdle incision" which crosses this point. He also describes experiences which warn against aggravation of the inflammatory process by injury from palpation, and also against the danger of creating inflammation, where such did not previously exist, by rough and repeated palpation. A "palpatory hematoma" resulted from such maneuvers in one case with a healthy appendix.

Zentralblatt für Gynäkologie, Leipzig.

February 15, XXXII, No. 7, pp. 201-232.

117 *Healing After Pubiotomy Wound. (Zur Frage der Heilung der Heboosteotomiewunden.) Oberndorfer.
118 Necrosis of Myomas in Pregnancy. F. Schenk.
119 Chorioepithelioma. (Ueber das Chorionepitheliom im Anschluss an einen interessanten Fall.) T. v. Wenczel.
120 Perforation of Uterus. E. Herz.
121 Importance of Retention of Fetal Membranes and Best Method for Removing Them. (Bedeutung der Eihautretention.) C. Louros.

117. Healing of Pubiotomy Wounds.—Oberndorfer's experience and experimental research show that there is no actual bone formation after pubiotomy, the space merely filling up with connective tissue. He thinks that the smoothness of the sawed surfaces is probably responsible for the absence of ossification. He found in one case that the callus protruded on each side, and cast a shadow with the Roentgen rays which apparently showed ossification; application of the rays from another point showed the persisting light interval between the stumps.